KAWAI

Personal Keyboard

FS780

Owner's Manual

Thank you for your purchase of the KAWAI FS780 Personal Keyboard.

How to use this manual

This manual is divided into two sections: Basic Operation and Advanced Operation.

The Basic Operation section will help you become familiar with the basic, but extremely powerful, features of the FS780. By the time you're through with this first section, you will have a clear understanding of how to select Tones and Rhythms, adjust Tempo, use Auto-Accompaniment, use Arrangement Expander, Recorder functions, and operate ONE FINGER AD-LIB.

The Advanced Operation section will help you explore FS780's more advanced features such as combining Tones, adding Effects, using the Synthesizer and MIDI, and programming Accompaniments or ONE FINGER AD-LIB phrases. To get the most from your FS780, please read this entire manual carefully -- beginning with the important information on page B – 1.

Should you have any trouble getting the FS780 to perform properly, please refer to the Table of Contents (on the next page) and review the pertinent section of this instruction manual.

Have fun learning to play your FS780!

■ Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.

■ This instrument complies with the limits for class B digital apparatus, pursuant to the Radio Interference Regulations, C.R.C., c. 1374.

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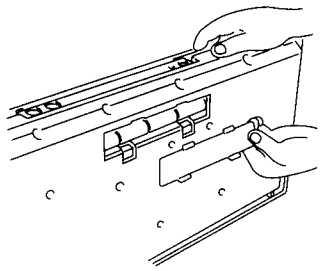
Before Using the FS780

1. Cautions

- Do not subject the FS780 to severe shocks.
- Do not expose the FS780 to direct sunlight, or high temperatures (such as inside your car on a warm day).
- Do not use the FS780 where there is excessive moisture or dust.
- Do not disassemble or attempt to modify the FS780.
- Should the FS780 become soiled, clean it using a soft, dry cloth. If this does not remove the stain, wet the cloth slightly before wiping. Never use alcohol or thinner to clean the FS780.
- Do not allow foreign matter to enter the gaps between the keys or around the buttons.

2. Connecting the Power Supply

The FS780 can use either your home AC power outlet or dry cell batteries as a power source.



To insert batteries:

1. Turn the unit over and remove the battery cover.
2. Insert six Size C dry cell batteries. Be sure they are aligned in the proper direction.
3. Replace the battery cover.

As the batteries begin to run down, the volume of the FS780 will decrease and the sound quality will begin to change or deteriorate. The unit may begin to malfunction. At that time, you should replace all six of the batteries.

Do not mix battery types (or new batteries with old ones), as this may cause problems such as battery fluid leakage.

Remove the batteries when not using the FS780 for long periods of time.

■ To use an AC power outlet:

Connect a PS-102 (or PS-101) adaptor (available separately) to the adaptor terminal on the rear panel of the FS780. Then, connect the adaptor to a wall socket.

We recommend that you use a KAWAI AC adaptor (10 volt 1000 mA) with the FS780. If you decide to use a universal adaptor (from another manufacturer) be sure that the voltage selector on that adaptor is set 10 volt 1000 mA. The polarity selector must be set to "negative" (–) polarity. If your universal adaptor is set on "positive (+)", your FS780 will not operate (or will run on batteries until the batteries are drained).

■ Connecting the FS780 to an audio device

To enjoy listening to the sound of your FS780 through your home stereo system or other external audio device, purchase a standard connecting cord (Stereo RCA pins) at an electrical goods shop or an audio specialty store. Use it to connect the FS780's LINE OUT jacks to the LINE IN or AUX IN jacks on your audio system.

■ About the FS780's internal memory

The contents of the FS780's internal memory such as song data will be kept stored by a battery built into the unit for a period of up to five years.

Note that if you turn the power switch ON while holding down keys C and E at the left end of the keyboard, all of the contents of the memory will be erased, and the keyboard's factory settings will be restored.

You cannot back up the internal memory once the battery built into the FS780 is drained. So, we recommend that you save your important data into an external sequencer (see "Using the MIDI Functions" section). For a replacement battery, contact your authorized KAWAI dealer.

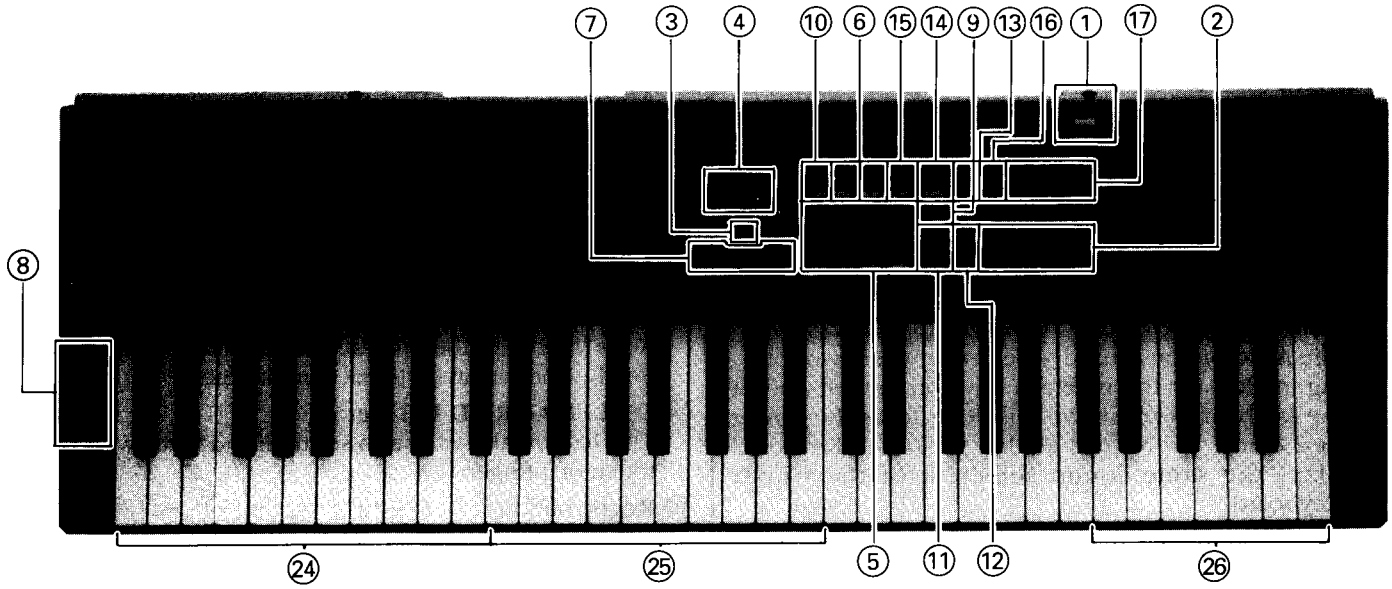
■ Protective plastic covering on front panel

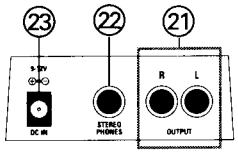
Your FS780 comes equipped with a thin plastic covering over the front panel, designed to protect the panel from dust and scratches. If you want to remove this covering, carefully use a fingernail to lift up one of the corners. Then, slowly peel off the covering and discard it.

■Trouble shooting on your FS780

Problem	Check the following
No sound from your FS780.	1) Check your power adaptor. We recommend that you use a KAWAI 9- or 12-volt adaptor. 2) If using another brand of adaptor: – Does the voltage range from 9-12 volts? – Is it set to negative (–) polarity? – Is it rated above 1000 mA? 3) Have you tried six fresh batteries? 4) Are all the batteries aligned in the proper direction?
You notice that the front panel has a "cloudy" finish or has begun to "bubble" or "peel". This is not a defect.	There is a thin plastic film applied to the glossy panel (where the sounds and rhythms are printed) for protection during shipping. You can remove this film at any time. Use a fingernail to carefully lift up one of the edges, then peel off the protective film.
You are using the **numeric Selector** buttons to select a two-digit number, but a single-digit number appears in the display.	You may be taking too long to enter the second digit. Once you enter one digit, the FS780 waits for four seconds to see if a second digit follows. If the second digit is not entered within that time, the FS780 assumes that you meant to enter a single-digit number. Be sure to enter all two-digit numbers in rapid succession.
The rhythm will not start when you press the yellow **Start/Stop** button.	Press the **Tempo Up** button to see if someone has inadvertently activated the TEMPO "SYNC." mode. The display will read "SYC" if this is the case. The **Start/Stop** button will not operate in TEMPO "SYNC." mode. To escape SYNC mode, press the **Tempo Up** button until a number appears in the display.
The DUAL feature does not combine certain sounds.	Are you trying to combine any of the SPLIT sounds? These cannot be used with the DUAL feature, since they already contain two sounds.
The RECORDER will not record.	The recorder will not record when there is already a song in memory. Use the ERASE procedure (press both the **Rec/End** and **Play/Stop** buttons simultaneously) for that song to clear a particular song. Then try recording again.
The keyboard only plays drum sounds.	The DRUM SET sound (#90) has probably been selected. Use the **Sound 1** and **Selector** buttons to select a different sound (refer to the section of the manual which describes "Getting Started Selecting Sounds").
The AUTO function is not working properly.	Check to see if someone has set your FS780 to operate in AUTO 2, AUTO 3, or AUTO 4 modes. All of these alternative modes are different from the normal AUTO 1 style of accompaniment. (Please refer to the "Advanced Use of Auto-Accompaniment" section of this manual.)
The FS780 is not sending "automatic" note information via MIDI.	See the MIDI section of this manual. The ACCOMPANIMENT MIDI OUT function must be set to "on". Otherwise, the FS780 will only send "note" information (notes that are actually played) via MIDI.

Overall Diagram and Explanation





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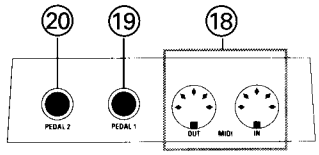


Operation panel

① **Power** Switch
The Power Switch turns the FS780's power on and off. When the power is turned on, the display window will light, showing the number 01.

② **Volume Control** buttons
The master volume buttons control overall volume of all notes played on the keyboard. Chord Accompaniment, Bass, and Rhythm volume can be adjusted separately using the appropriate buttons found to the left of Master volume.

③ **Demo** button
Pressing this button starts the built-in demo song contained in the FS780's memory. Press it again at any time to stop the demo song.

④ **Display**
The display window shows which sound or rhythm is currently selected. The window is also used to display a wide variety of other information which will be described later in this manual.

⑤ **Selector** buttons

a) **Numeric** buttons (Ten keys)
Used to enter the number that appear in the LED display. To enter a number from 1 to 9, just press the number you desire. The FS780 will wait for 4 seconds to see if you're going to press another digit. After this brief pause, the display will show the number you selected (01 to 09). To enter a number from 1 to 9 without the 4 seconds pause, put a "zero" before the number. For example, you would press "0" and "6" to select sound number "6" immediately (with no pause).

To enter a two-digit number, enter the two digits in rapid succession. For example, to enter sound number 25, press 2 followed quickly by 5. If you wait more than 4 seconds to enter the second digit, the FS780 will think you meant to enter a one-digit number. Referring again to the "25" example, if you wait too long to enter the second digit "5", the FS780 will think you meant to enter a "2" and then changed your mind to enter "5". The display will end up showing "5" instead of "25". BE SURE TO ENTER TWO-DIGIT NUMBERS IN RAPID ORDER.

b) "**-1**", "**+1**" button
These buttons are used to increase or decrease the numbers in the display window by a value of 1.

⑥ **Sound 1** and **2** buttons
These buttons are used to select from among the one hundred sounds stored in the FS780.

⑦ **Effects** buttons
These buttons allow you to add variety to the FS780's one hundred sounds by adding effects such as Sustain, Stereo Chorus, and Duet harmony to them.

⑧ **Pitch Bend** Wheel
Rotating this wheel up or down allows you to change the pitch of a sound.

⑨ **Auto** button
The **Auto** button is used to select between two "playing modes" for the nineteen keys on the left end of the keyboard (which we will refer to as the Lower Keyboard). In "Normal Mode", the Lower Keyboard plays the same sound selected for the Upper Keyboard.

In "AUTO Mode", the Lower Keyboard can be used to control the FS780's Auto-Accompaniment.

⑩ **Rhythm** button
This button is used when selecting from among the one hundred rhythm and accompaniment patterns stored in the FS780's memory.

⑪ **Rhythm Control** button
The FS780's Rhythm and Auto-Accompaniment section gives you four types of patterns to work with: Intro Patterns that can be used at the start of a song; Fill-in Patterns, to add contrast and variety during a song; Ending Patterns; and Basic Patterns which will be the foundation of any song using Auto-Accompaniment. These four types of patterns are controlled using these buttons. Lastly, the **Sync./Fill In** button lets you start when you press a key in the Lower Keyboard.

⑫ **Tempo** buttons
The tempo buttons can be used to control changes in Rhythm and Auto-Accompaniment tempo.

⑬ **Arr. Exp.** button
Adds variety to the auto-accompaniment by increasing the complexity of the accompaniment.

⑭ **ONE FINGER AD-LIB** button
This feature allows you to sound like a "pro" with the touch of a finger.

⑮ **Regis.** button
Complete front panel set-ups can be stored and recalled with this button.

⑯ **Synth & Pattern Maker** buttons
This button allows users of the FS780 to:

a) create new sounds (with the synthesizer);
b) create Rhythm and Auto-Accompaniment Patterns (Basic, Intro, Fill-in, and Ending) with Pattern Maker; and
c) create ONE FINGER AD-LIB phrases.

⑰ **Recorder** Section
These buttons allow you to record the songs you write or perform on the FS780.

■ Rear Panel

⑱ **MIDI IN/OUT** jacks
These jacks are used to connect the FS780 to other MIDI instruments and equipment.

⑲ **PEDAL 1** (DAMPER Pedal) jack
This jack allows you to connect an optional footswitch (model F-1, available separately) to the FS780. When the footswitch is depressed, notes played on the keyboard will play continuously for as long as the footswitch is held down. It operates like a sustain pedal on a piano. (This pedal has no effect on Rhythm and Auto-Accompaniment performance.)

The jack can also be programmed to let an optional footswitch (model F-1, available separately) function in different styles. Refer to the "Using the SYSTEM Functions" for details.

⑳ **PEDAL 2** (Accompaniment Hold) jack
The jack allows you to use the optional F-1 footswitch in a different way from above. When connected to the Accompaniment Hold jack, the F-1 footswitch can be depressed to add variety to Rhythm and Auto-Accompaniments. The jack can also be programmed to let an optional footswitch (model F-1, available separately) function in different styles. Refer to the "Using the SYSTEM Functions" for details.

㉑ **OUTPUT** jacks
These jacks are used to send the FS780's sound through external speakers or a home stereo system.

㉒ **STEREO PHONES** jack
When stereo phones are connected to this jack, the sound from the speakers is cut off. This allows you to play the FS780 at night and at other times when you might be concerned about disturbing others.

㉓ **DC IN** jack
This jack is used when connecting a Power Adaptor (model PS-101 or PS-102, available separately).

See page B-2 for special instructions if you are using a universal AC adaptor or other brand of adaptor.

■ Keys

㉔ **Lower Keyboard** (C1 ~ F#2)
Used as a specific set of keys when the AUTO (chord detection) or Hand Percussion functions are selected.

㉕ **ONE FINGER AD-LIB** keys (G2 ~ B3)
Used to play One Finger Ad-Lib phrases when the ONE FINGER AD-LIB function is selected.

㉖ **User Program** keys (C#5 ~ C6)
Used for programming Synthesizer sounds, Auto-Accompaniments (with Pattern Maker), and ONE FINGER AD-LIB phrases.

Of course, the keys in the special keyboard sections named above also function as a normal keyboard when all automatic settings are off.

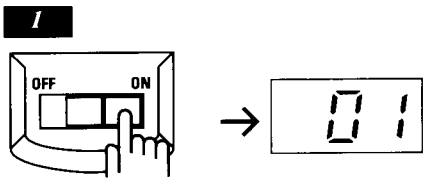
Throughout this manual, the keys on the FS780 will be referred to in the following manner:

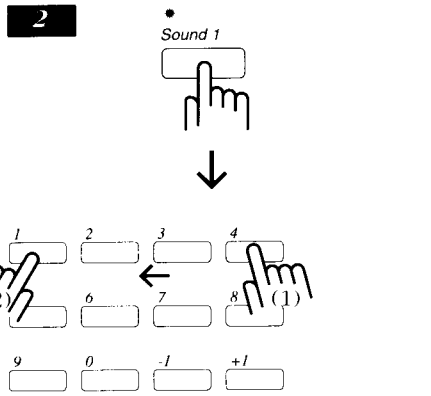
C1 stands for "the first C" on the keyboard, counting from the left.

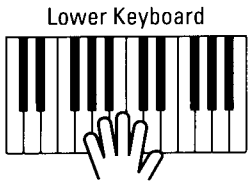
B2 stands for "the second B" on the keyboard from the left.

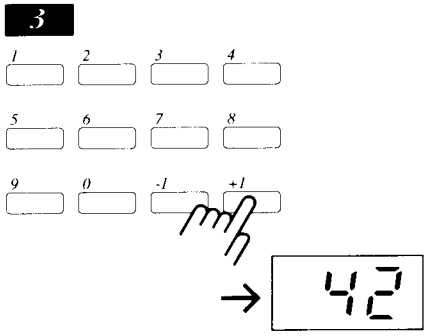
The total range of the FS780 is C1 to C6.

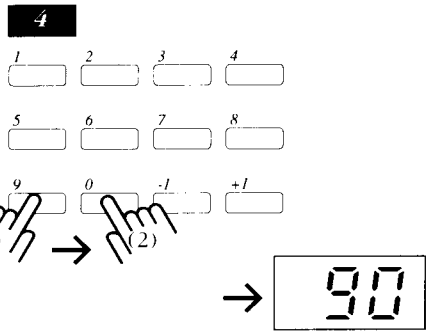
Getting Started on your FS780: Selecting Sounds











This section will show you how to select and play any of the sounds listed in the "100 SOUND LIBRARY" on the FS780's front panel.

1. First, check to be sure that the **POWER** switch is turned ON. The display should be lit, showing the number 01.

   Try pressing one of the keys on the keyboard. You should hear the sound which is numbered 01 (PIANO 1). The FS780 features Dynamic Touch Response which allows you to control the volume of each note by playing hard or soft. Try playing a few notes. You'll notice that the harder you strike the keys, the louder they will sound. The volume of the entire keyboard can be controlled with the **Master Volume** buttons.

2. Check to be sure that the lamp above the **Sound 1** button is lit. (If not press the **Sound 1** button). Next, press **#4** and then **#1** with the **Selector** buttons to select sound number 41 (STRINGS/FLUTE). The number in the display should change to read 41. If you select one of the SPLIT sounds, which are numbered 41 through 50 in the "100 SOUND LIBRARY," you will find that the 19 keys on the left end of the keyboard (the Lower Keyboard) produce a different sound from the rest of the keys to their right.

   ⚠ *When you use the **numeric Selector** buttons to select a two-digit number, enter the two numbers in rapid succession. A single-digit number will be automatically entered if you take too long to enter the second digit.*

3. Next, look at the **Selector** section and find the button marked **+1**. If you press it, the number shown in the display should change to 42.

   When you press one of the keys on the keyboard, you will hear sound number 42 (STRINGS/VIBES).

   Pressing the **-1** button in the **Selector** section will bring you back to sound number 41.

   You can use the **Selector** section to choose any of the FS780's one hundred sounds quickly and easily. The **+1** button adds one to the number in the display, while the **-1** button subtracts one from the number. The number shown in the display is the number of the sound currently selected.

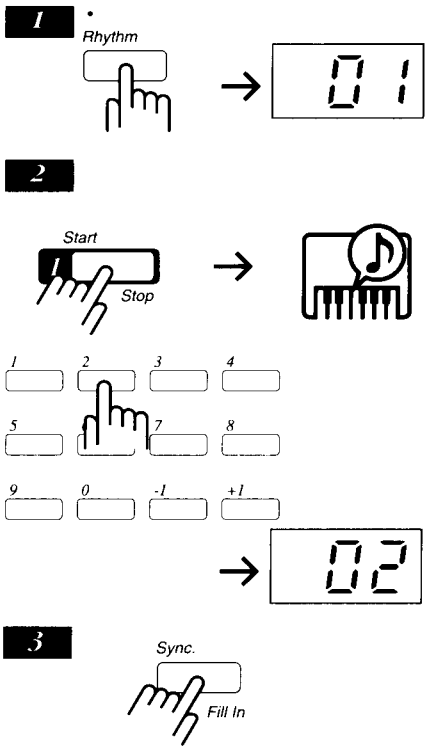
4. Press "**9**" followed quickly by "**0**" to select sound number 90 "DRUM SET".

   Now, when you press one of the keys on the Lower Keyboard, you will hear the sound of the instrument pictured above that key. The Upper Keyboard will also produce drum sounds even though no pictures are above them.

The following chart shows 19 drum sounds assigned to keys C1 through F#2. Starting with the next note, G2, the same 19 drum sounds are assigned to the next 19 keys in identical order.

Key	MIDI key #	Instruments	Key	MIDI key #	Instruments
C1	36	Bass Drum	A#1	46	Hi-hat Open
C#1	37	Rim Shot	B1	47	Mid Tom
D1	38	Low Snare	C2	48	Hi Conga
D#1	39	Hi Clap	C#2	49	Crash Cymbal
E1	40	Hi Snare	D2	50	Hi Tom
F1	41	Synthe Percussion 1	D#2	51	Ride Symbal
F#1	42	Hi-hat Close	E2	52	Low Cymbal
G1	43	Low Tom	F2	53	Synthe Percussion 2
G#1	44	Low Clap	F#2	54	Small Cymbal
A1	45	Low Conga			

■Getting Started with Rhythms

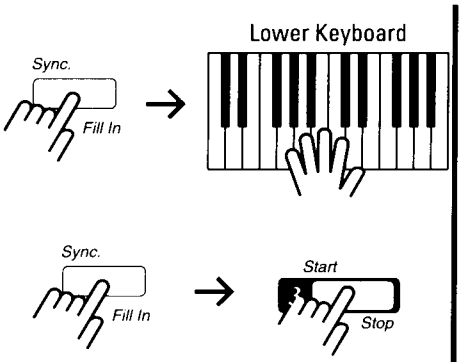


This section will show you how to select and play any of the rhythms listed under the "100 RHYTHM LIBRARY" on the FS780's front panel.

1. Begin by pressing the **Rhythm** button. The lamp above the switch will light, and the display will change to read 01.
2. If you press the **Start/Stop** button at this point, you will hear an Intro Pattern, after which the Basic Pattern for the rhythm number 01 (DANCE 1) will begin to play. If you want to start the rhythm without the Intro Pattern, press the **Start/Stop** button while holding down the **Sync./Fill In** button. Now find the numeric keys and press the **#2** button. The display will change to read 02 and the rhythm will change to number 02 (DANCE 2).

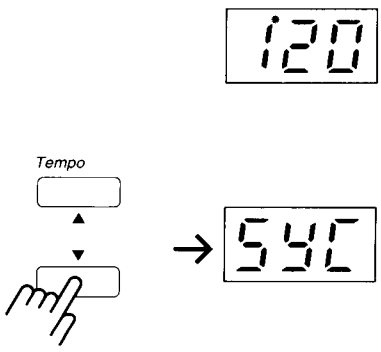
   You may use the **numeric** keys in this way to select any rhythm you desire. The number in the display will change to indicate the number of the rhythm currently selected.
3. Try pressing the **Sync./Fill In** button while the rhythm is playing. The FS780 should play a "Fill-in" pattern suited to the rhythm currently selected. The Fill-in function is very effective when used to add variety within a song.
4. Next, press the **Start/Stop** button. An Ending Pattern which matches the currently selected rhythm will play, and the rhythm performance will end. You can use this Ending Pattern to bring a song to an ending. Or, if you want the rhythm to end without the Ending Pattern, simply press the **Start/Stop** button quickly two times.

◆Using the SYNC feature



1. If you press the **Sync./Fill In** button while the rhythm is off, the button functions as a **Sync./Fill In** button only. When **Sync./Fill In** button is pressed, the rhythm will begin to play the moment you press a key on the Lower Keyboard. The rhythm will synchronize with your touch of the keyboard.
2. If you want to start the rhythm with your touch of the keyboard (as described above), but would rather have the rhythm begin with an appropriate Intro Pattern, press the **Sync./Fill In** button and then the **Start/Stop** button. When you press a key on the Lower Keyboard, the Intro Pattern will play followed by the Basic Pattern.

◆Changing Rhythm Tempo



You can use the **Tempo** buttons to change the tempo of any rhythm pattern. The **Up** button causes the tempo to increase. The **Down** button causes the tempo to decrease. The small lamp at the top center of the display (labelled BEAT) will also blink in time with the tempo. When you press either of the **Tempo** buttons, the display will briefly show the current tempo.

If you continue to press the **Tempo Down** button to minimum tempo, the display will change to read "SYC" which is an abbreviation for "SYNC." or "synchronized". This setting is a MIDI-related function and is discussed on page A-23 in the Advanced Operation section of this manual. The **Start/Stop** button will not operate in this mode. To escape SYNC mode, press the **Tempo Up** button until a number appears in the display.

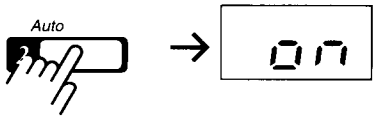
■Using Auto-Accompaniment

The FS780's Auto-Accompaniment section is one of the most powerful found on any portable keyboard. It has the capability of working in four different "modes". In this Basic Operation section of the manual, however, we will deal only with the first mode called "AUTO 1".

When your FS780 is turned on, it is automatically set to AUTO 1 operation. In AUTO 1 mode, you can play chords with your left hand (which will generate full accompaniments) while playing the melody with your right hand. Let's try the Auto-Accompaniment section in this mode.

◆Explanation of AUTO1

1



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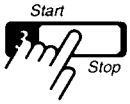
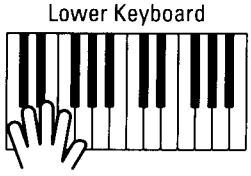


3



This Auto-Accompaniment mode (AUTO 1) allows you to create a realistic ensemble performance by simply pressing and holding left hand chords as you play the melody.

The nineteen keys on the left end of the keyboard (which we call the Lower Keyboard) are used to play the chords which control the Auto-Accompaniment.

1. First, prepare the Lower Keyboard for chord use.

   Press the **Auto** button. The display will briefly change to read "on" as shown at left. If you see "OFF" flash in the display, press the **Auto** button again until you see "on" flash and disappear.

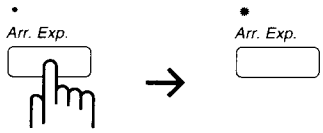
2. Select a rhythm using the **Rhythm** button and the **Selector** buttons. Then, start the rhythm by pressing the **Start/Stop** button. The drum pattern should begin to play.

3. Now, try pressing one or more of the keys on the Lower Keyboard. You should hear the Auto-Accompaniment begin to play.

   The tempo of the Auto-Accompaniment can be controlled using the **Tempo** buttons. See page Ap-1 for a chart of the chords that FS780 can recognize.

The other three modes of Auto-Accompaniment are discussed in the Advanced Operation section of this manual.

◆Using the Arrangement Expander



The Arrangement Expander feature is used to add excitement to the built-in rhythm and auto-accompaniment patterns. It's an easy way to add variety to your performances. Variations can be easily accessed by using the **Arr. Exp.** (short for ARRANGEMENT EXPANDER) button or the optional F-1 footswitch. Here's how it works:

1. Press the **Arr. Exp.** button while the Auto-Accompaniment is playing. The small LED lamp above the button will light up and the auto-accompaniment will become more complex and exciting.
2. Press the **Arr. Exp.** button again. The small LED above the button will go off and the auto-accompaniment will return to its original form.

⚠ *You can also use the ARRANGEMENT EXPANDER function with an F-1 footswitch (available separately). Refer to page A-17 for details. The ARRANGEMENT EXPANDER does not work if you select one of the USER rhythms, which are numbered 96 throug 00 in the "100 RHYTHM LIBRARY".*

■ Using ONE FINGER AD-LIB to play like a "pro"!

By now, we hope you've become very familiar with the Auto-Accompaniment function of the FS780. But you may be wondering what you can do to spice up the melody a bit. Well, the ONE FINGER AD-LIB function is just for you! This feature separates KAWAI keyboards from all others.

What is ONE FINGER AD-LIB?

ONE FINGER AD-LIB is a feature which allows anyone, any level of musical ability, to sound like a "pro". With the touch of a finger, you can play hundreds of impressive ad-lib melodies with full Auto-Accompaniment and chord progressions. It's great fun!

The ONE FINGER AD-LIB phrases are determined by rhythm you select. For example, there are funky ad-lib phrases for rhythm number 07 (SLAP FUNK), and some exciting rock'n roll phrases that go well with number 29 (R&R1). There are seventeen preset ONE FINGER AD-LIB phrases for each of the FS780's one hundred rhythms: a total of 1,700 phrases in all!

How does ONE FINGER AD-LIB work?

1. Use the **Rhythm** button and the **Selector** buttons to select a rhythm.

   Next, press the **ONE FINGER AD-LIB** button. The small lamp above the button will light up. (See illustration 1-b).

2. Now, press and hold down one of the keys in the ONE FINGER AD-LIB section of the keyboard (shown in the drawing at left). By holding down a single key, you can play an entire ad-lib phrase! Try other ONE FINGER AD-LIB keys. Note that each key plays a different phrase and that some keys use different sounds than other keys.

3. **Adding Rhythm and Auto-Accompaniment.**

   Next, press the **Auto** button. The display should change briefly to read on.

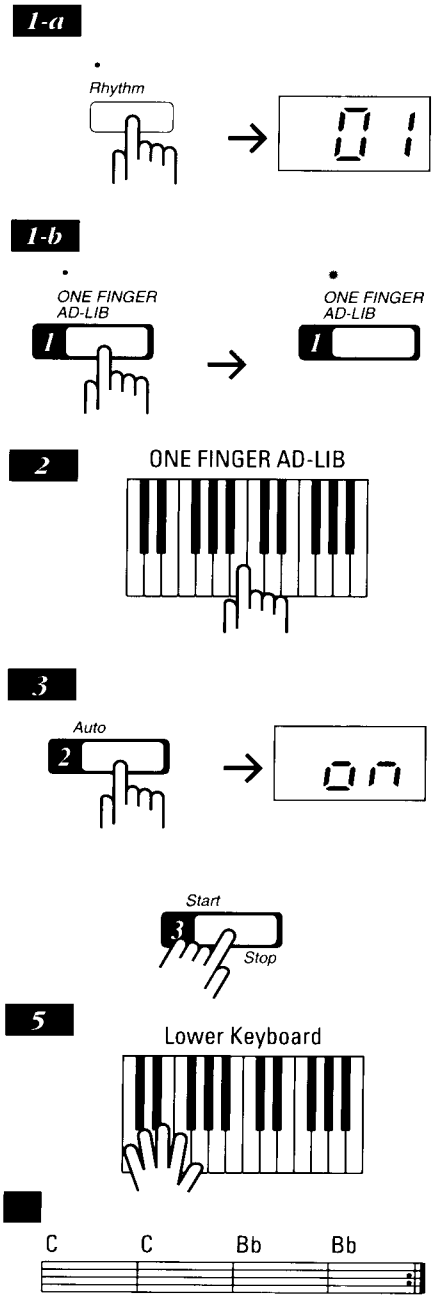
   Start the Rhythm using the **Start/Stop** button. The Rhythm and Auto-Accompaniment should begin to play. Listen closely! Notice that the Auto-Accompaniment chords are changing automatically. The FS780 has been programmed so that each Rhythm is accompanied by an authentic sounding chord progression that plays automatically.

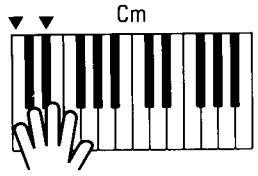
4. Now hold down one of the keys in the ONE FINGER AD-LIB section of keyboard. The ad-lib phrase will play. If you hold the AD-LIB key down, you'll notice that the phrase changes automatically with the chord progression!

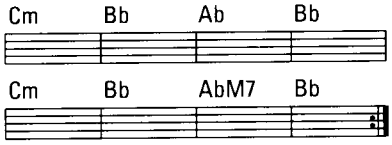
5. If you decide that you'd like to change the preset chord progression, play any chord on the Lower Keyboard. This will override the preset progression. Then, the ONE FINGER AD-LIB phrases will change to match your own chords.

A note about the ONE FINGER AD-LIB chord progressions

When you start the Auto-Accompaniment with the ONE FINGER AD-LIB function turned ON, the chord progression that plays is in the key of C. For example, the progression for rhythm number 01 (DANCE 1) is as shown at left.







Changing Keys

Some of you might be happier if the chord progression for DANCE 1 were in a minor key. To do this, you can perform an operation like the one described below (again, you should stop the rhythm first):

1. Check that the **ONE FINGER AD-LIB** button and the **Auto** button have both been turned ON.
2. Play a Cm chord as shown in Illustration at left.
3. Then press the **Start/Stop** button to start the Rhythm and Auto-Accompaniment. The chord progression should now be in the key of "C minor" as shown at left.

There are two ONE FINGER AD-LIB chord progressions for each Rhythm -- one in a major key and one in a minor key. If you would prefer that the chord progression play in the key of Am, just perform that the operation above playing an Am chord instead of the Cm chord we used in the example.

Now select different Rhythms and begin exploring the 1700 ONE FINGER AD-LIB phrases built into the FS780! Have fun!

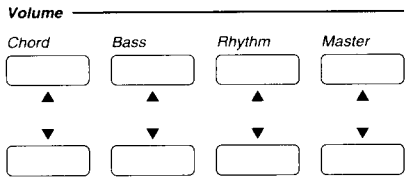
◆Special Use of ONE FINGER AD-LIB

We've recorded some special melodies into the FS780 for use with ONE FINGER AD-LIB. Here's how to play them:

1. First, select a rhythm. Let's try #92 (BOLERO).
2. Next, make sure that the ONE FINGER AD-LIB function is turned on -- and the AUTO function is on.
3. Press **Start/Stop** button to get the rhythm going.

   You may want to set the "standard tempo" for BOLERO by pressing either of the **Tempo** buttons at this time.
4. Now, hold down the lowest ONE FINGER AD-LIB key (G2). Make sure that your initial hit of the G2 key is on the main beat (if you listen to the rhythm for awhile, you'll hear this main beat). Can you hear the first melody notes of BOLERO playing when you hold down G2?
5. The rest of the melody can be played as you move up the ONE FINGER AD-LIB keys in chromatic fashion (G2, G#2, A2, A#2, etc). Each successive key is programmed with three full beats of the BOLERO melody.
6. Now, let's try putting the whole melody together. Make sure the BOLERO rhythm is playing. On the main beat, hold down the G2 key for three beats. Then, immediately hold down the G#2 key for the next three beats; then the A2 key for the next three beats; and so on, until the entire melody is played. By the time you reach the end of the ONE FINGER AD-LIB region, you should have played BOLERO!

The Mixer Section



So far, we have covered the basics of the FS780's Rhythm, Auto-Accompaniment, and ONE FINGER AD-LIB functions. This section will show you how to use the Digital Mixer section.

The volume of each part can be adjusted using the **Volume** buttons.

Volumes may be set to any of sixteen levels ranging from 1 to 16 (16 being the loudest). The current volume for a specific part will appear briefly on the display each time a volume button is pressed.

a) Master Volume buttons
These buttons control the overall volume of the FS780 which includes the volume of the Rhythm, Auto-Accompaniment, ONE FINGER AD-LIB phrases, and your own manual playing.

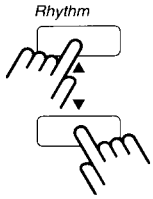
b) Chord Volume buttons
These buttons control the volume of the Auto-Accompaniment Chords.

c) Bass Volume buttons
These buttons control the volume of the Auto-Accompaniment Bass part.

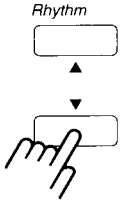
d) Rhythm Volume buttons
These buttons control the volume of the Rhythm (drum) part.

The Mixer section will help you keep the various "parts" of your music in "balance" with each other.

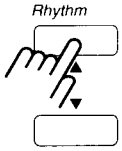
A



B



C



Muting a part:

Simultaneously pressing both the **Up** and **Down** volume buttons for any one part (Chords, Bass or Rhythm) causes the volume of that part to be turned off. This procedure for turning the volume of a particular part off is called "muting" a part. (See illustration A).

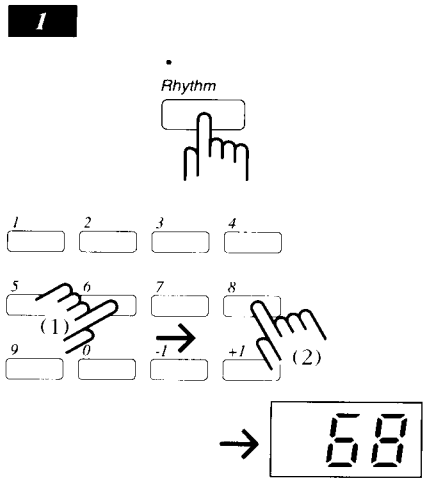
You can immediately return a muted part to its original volume (the volume just prior to muting) by pressing the **Down** button for that part (see Illustration B).

Pressing the **Up** button also restores the muted part, but its volume will be at near zero. Holding down the **Up** button for that part lets you increase the volume gradually (see Illustration C).

The volume can also be controlled by MIDI input, as shown in the following chart: (See page A-22 for details)

Melody volume .....1 ch (N ch), 2 ch (N+1 ch)
CHORD volume .....3 ch (N+2 ch)
BASS volume .....4 ch (N+3 ch)
RHYTHM volume.....10 ch (D ch)

Using REGISTRATION Memory



What does the REGISTRATION memory do?

Imagine that you want to use a quiet sixteen beat pattern for the majority of your song, but need to switch to another rhythm style for the climax. Of course, it would be nice to raise the volume at that time, too. Such variations are not uncommon and add a lot to a song -- but you might find it hard to press all of those buttons! In these situations, you will find the REGISTRATION memory very useful.

Up to 20 front panel set-ups can be stored in REGISTRATION memory. The following musical elements can be stored in REGISTRATION memory.

a) Volume for each part

b) Sound number to be selected

c) Rhythm number to be selected

d). The "on or off" status of the following buttons:
Arr. Exp. button, **ONE FINGER AD-LIB** button, **Effects** buttons, and **Auto** button.

e) TRANSPOSE setting

f) DUAL and DETUNE settings

g) TEMPO setting

How to use the REGISTRATION memory:

As an example of the way REGISTRATION memory can be used, we will show you how to set the FS780 so that you can use the Rhythm and Auto-Accompaniment patterns for Tango and Habanera in a single song.

1. Establish your panel setting (REGISTRATION).

   Use the **Rhythm** button and the **Selector** buttons to select rhythm number 68 (TANGO). Start the Auto-Accompaniment (using notes on the Lower Keyboard), and use the **Volume** buttons to adjust the volume of each part to a level that balances with the others. Also use the **Sound 1** and **Selector** buttons to select the sound you want for the melody. Now press the **Start/Stop** button to stop the accompaniment before going to step 2. The result of all these changes is a complete front panel "set-up" (or "setting") which can be stored in REGISTRATION memory.

2. Storing your panel setting in REGISTRATION memory.

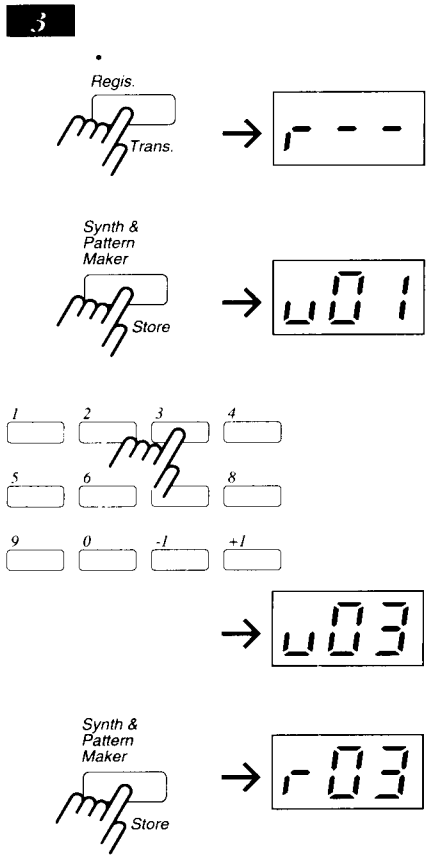
   Press the **Regis.** (short for REGISTRATION) button. The lamp above the button will light up and the display should change to read r - -. The "r-" stands for REGISTRATION.

   The FS780 can remember twenty set-ups using the REGISTRATION memory. Each set-up is given a number from 01 to 20. Press the **Store** button (same button as the **Synth & Pattern Maker** button) and display will change to read u01.

   Now press the **#2** button of the **numeric** keys. The display should change to read u02.

   You are now ready to store the current panel setting to REGISTRATION memory number 02.

   Press the **Store** button a second time and the display will change to read r02. This means that the rhythm number, sound number, and volume settings that you selected in step 1 above have been stored as REGISTRATION number 02.



3. Storing a second REGISTRATION setting

   Next, select rhythm number 69 (HABANERA1). Choose a melody sound number and set the volume of each part as you did in step 1. Stop the rhythm using the **Start/Stop** button. Then press the **Regis.** button once again. Press the **Store** button and the u01 in the display will begin to flash. Use the **numeric** keys to change the display to read u03. Press the **Store** button once again, and the display will stop flashing. The new rhythm number, sound number, and volume settings that you just selected have been stored as REGISTRATION number 03.

4. Using your REGISTRATION settings in a song.

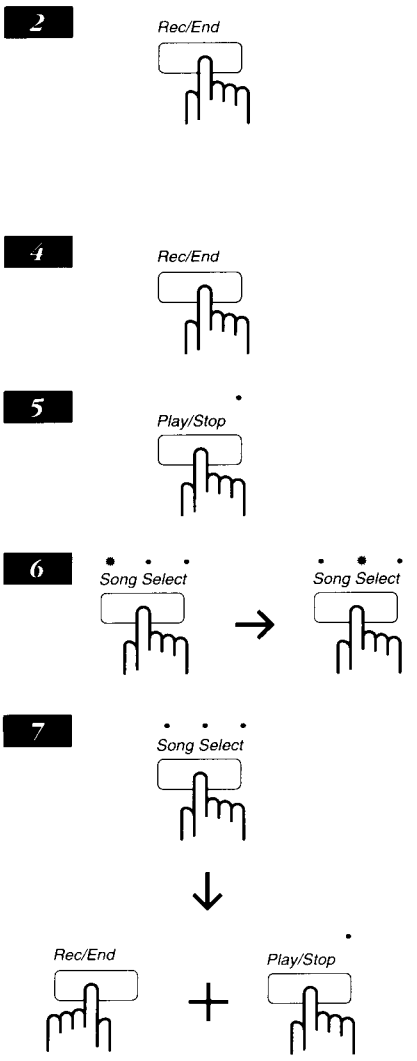
   Now press the **Regis.** button. Then, use the **numeric** keys to change the display to read r02 once again. Press the the **Start/Stop** button to start the Rhythm pattern.

   The rhythm that you hear should be rhythm number 68 (TANGO). When you press one or more of the keys on the Lower Keyboard, you will hear the Auto-Accompaniment for that pattern at the volume you set in step 1. above.

5. Now, while the TANGO rhythm is playing, press the **#3** button or **+1** button. The display should change to read r03 and the HABANERA rhythm should begin to play. The volume levels should be as you set them in step 3. above.

6. Once you have stored several "set-ups" in the REGISTRATION Memory, you can access them at any time by simply pressing the **Regis.** button and using the **numeric** keys to select the Registration number that you want to use (r01 through r20).

Using the Real-Time RECORDER



To record your performances:

This section will show you how to record the songs you perform using the FS780's RECORDER feature. The RECORDER allows you to record up to three different songs.

Here are the steps:

1. First, set up the FS780 for your performance.

   Begin by selecting the Sound, Rhythm, and Lower Keyboard mode settings that you will require to perform your song. If you want to make changes in Sounds, Rhythm and Auto-Accompaniment patterns, or Volume during your song, you should use the REGISTRATION function.
2. Press the **Rec/End** button. You will hear the sound of the metronome. (If the metronome does not start, see step 7. below).
3. Start playing! Everything you play including ONE FINGER AD-LIB phrases and changes in Sounds or Rhythms, will be recorded as you played it. That's what we mean by "Real-Time". What you play is what you get.
4. When you are done with your song, press the **Rec/End** button once more. The recording will end, and your song will be recorded as SONG 1.
5. Now let's try playing the song back. Press the **Play/Stop** button. The song you just recorded should begin to play. If you would like to stop the performance without listening through to the end, just press the **Play/Stop** button once more.
6. Next, if you would like to record a different song, press the **Song Select** button. Check that the lamp beside the **Song Select** button changes to indicate SONG 2. Then record your next song using the procedure described on the previous page.
7. If you would like to record over a song which has already been recorded, it is necessary to erase that song first. If, for example, you would like to record over SONG 1, you might try pressing the **Rec/End** button; but you would find that the metronome will not start. (This is to prevent you from accidentally recording over a song which you would like to keep!)

   In order to erase a song, use the **Song Select** button to change the lamp so that it indicates the song you want to erase. Then, press the **Rec/End** button and the **Play/Stop** button simultaneously. The song will be erased instantly.

When recording songs using the RECORDER, the tempo information will not be recorded. This allows you to record songs at a slow tempo and play them back at a fast tempo.

Congratulations!

You've finished learning the FS780's Basic Operations.
Now have more fun exploring the Advanced Operations section.

This completes the Basic Operation section of the FS780 instruction manual.
We trust that this first section has given you a good basic knowledge of FS780's powerful features.
But you've only just begun to explore the full capability of the FS780!
The Advanced Operation section will help you to learn how much more can be done with this powerful instrument.

■Advance Use of Sounds:
◆Combining Two Sounds

As a first step in this Advanced Operation section, let's try combining two of the sounds listed in the FS780's "100 SOUND LIBRARY," for a rich DUAL sound effect.

1. First, select any sound you like using the **numeric** keys. As an example, we will choose sound number 01 (PIANO 1).
2. Next, press the **Sound 2** button. The lamp above the button will light up. Now, select another sound.

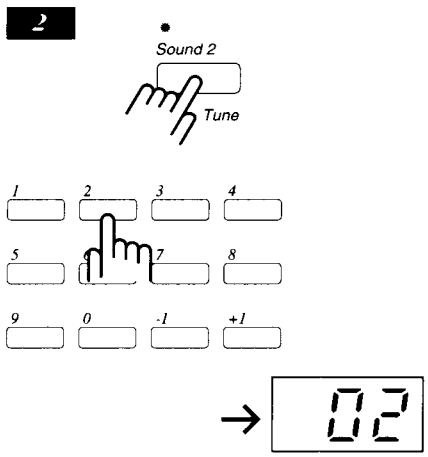
   [We will choose number 02 (PIANO 2) for our example.]
3. Now press both the **Sound 1** button and the **Sound 2** button simultaneously. The lamps above these buttons should light up and the display should change to read d00.

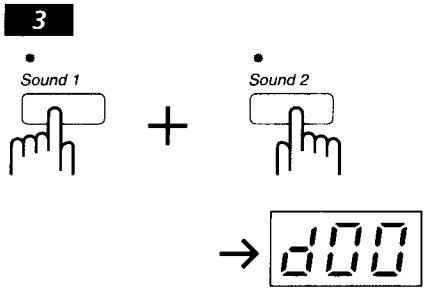
   If you press one of the keys on the keyboard, you will hear the combination of sounds 01 and 02, PIANO 1 and PIANO 2.

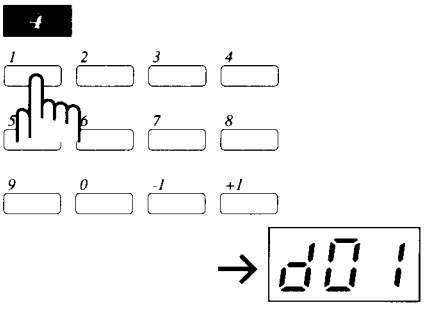
— What does d00 mean? —

When two sounds are played at once, varying the pitch of the sounds slightly with respect to each other makes the combined sound much richer. This varying of the pitch of two sounds is called "Detuning." The FS780 allows you to detune two sounds when combining them using the DUAL effect. The "d" in the display therefore stands for "Detune," and the "00" following it represents the difference in pitch between SOUND 1 and SOUND 2.

4. Press the **#1** button. The display should change to read d01. Now, when you press a key on the keyboard, you will hear a slightly richer sound. You can use the **numeric** keys to set a detune value of 00 to 07. The higher the number is, the greater the difference in pitch becomes. When our PIANO 1/PIANO 2 combination is set to a detune value of 07 (d07), the result is a "honkytonk" sounding piano. Using the DUAL effect with 8 levels of detune, you have up to 32,400 different DUAL sound variations available.







◆Adding Effects

PITCH BEND

Chorus

Sustain

Duet

The FS780 has a variety of effects which can add realism or excitement to your selected sound.

a) PITCH BEND Wheel:
Pitch bend is an effect by which the pitch of a sound is bent smoothly up or down. It is useful for copying the sound of a guitar being played with a "Choking" technique. Try rotating the Pitch Bend Wheel while holding down one of keys on the keyboard. The pitch of the sound should bend smoothly up when you rotate the pitch wheel away from you — or down when you rotate the wheel toward you.

b) CHORUS:
Pressing the **Chorus** button adds a deep stereo richness to the currently selected sound. Pressing the button a second time cancels the effect.

c) SUSTAIN:
Pressing the **Sustain** button lengthens the duration of notes played on the keyboard. Pressing the button a second time cancels the effect.

d) DUET:
When the **Duet** button is pressed, the FS780 will add a harmonizing note to each melody note that is played on the keyboard, so you can enjoy a duet performance while playing only one melody note at a time. This function is extremely effective when used together with the Auto-Accompaniment function. Pressing the button a second time cancels the DUET effect.

All of the above effects can be applied only to SOUND 1 or SOUND 2, not to the Auto-Accompaniment (RHYTHM, BASS, and CHORD parts).

When you choose the DUAL sound effect or the CHORUS effect, the number of notes that can be heard at the same time (polyphony) will be reduced.

The DUAL effect cannot be activated when one of the SPLIT sounds (numbered 41 through 50) is chosen as SOUND 1 or SOUND 2.

*If you press the **Duet** button while using the DUAL sound effect, the harmonizing note will be SOUND 1.*

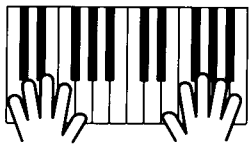
The DUET effect cannot be activated when LOCAL CONTROL is set to "OFF" (Refer to page A – 18 for details).

■ Advanced Use of Auto-Accompaniment Section:

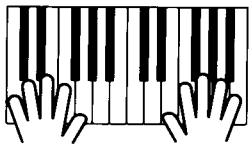
The FS780's Auto-Accompaniment section is one of the most powerful found on any portable keyboard. It has the capability of working in four different modes. In the Basic Operation section, we discussed only the first mode, AUTO 1, which is the standard operational mode for most portable keyboards. In this Advanced Operation section, we will introduce the remaining three modes: AUTO 2, AUTO 3, and AUTO 4.

Having four different Auto-Accompaniment modes allows the FS780 to be enjoyed by people at all levels of musical ability -- from beginners to experienced professionals.

Let's outline the four modes of Auto-Accompaniment offered by the FS780:

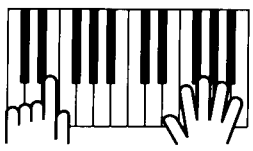


a) AUTO 1:
Lets you play single-finger or fingered chords with your left hand while playing the melody with your right. Your left hand chords trigger the Auto-Accompaniment. For a review of AUTO 1 operation, see the Basic Operation section.



b) AUTO 2:
Lets you trigger the Auto-Accompaniments using traditional, two-handed piano-style playing. The lowest note of your left hand (in the Lower Keyboard) triggers the Auto-Accompaniment bass line. The notes you play with your right hand trigger the Auto-Accompaniment chords. With Auto 2, you will hear both the right hand chords that you play and the preset Auto-Accompaniment chords.

c) AUTO 3:
This mode is similar to Auto 2 in that your lowest left hand note triggers the Auto-Accompaniment bass line and your right hand chords trigger the Auto-Accompaniment chords. The difference with Auto 3 is that the preset Auto-Accompaniment chords do not play. This allows you total freedom to select more complex chords for your Auto-Accompaniment (without clashing with any preset chords).



d) AUTO 4:
The mode to use when you're not sure what chords to play. AUTO 4 has a preset chord sequence for each rhythm (the same sequence used with ONE FINGER AD-LIB). You can play through the entire chord sequence by playing successive notes (in order starting with C1) in the Lower Keyboard with your left hand.

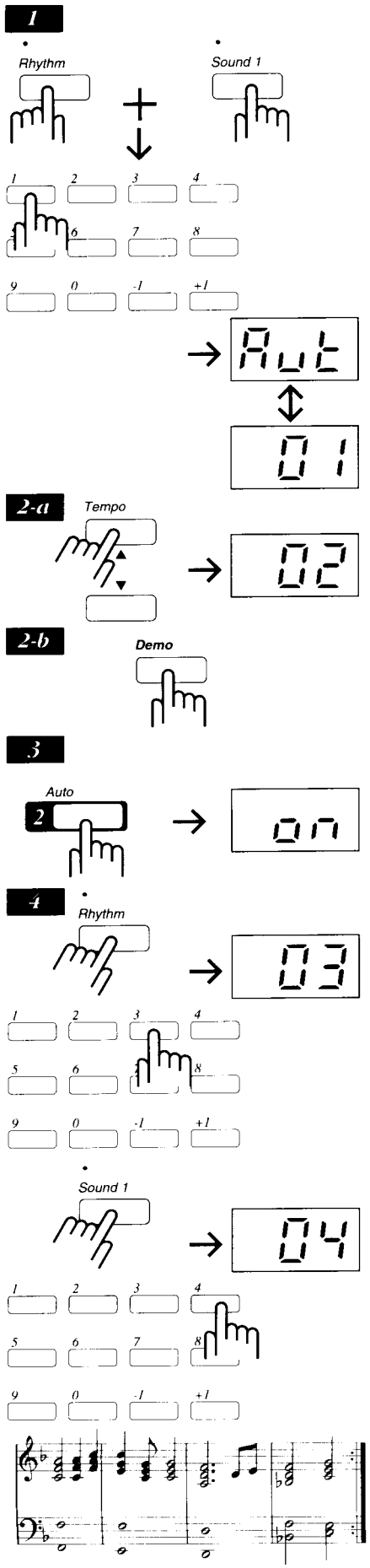
Let's try using these three new Auto-Accompaniment modes, beginning with AUTO 2.

⚠ *ONE FINGER AD-LIB is not operational when the FS780 is in AUTO 2 or AUTO 3.*

◆ Explanation of AUTO 2

AUTO 2 is an advanced form of Auto-Accompaniment which lets you trigger the Auto-Accompaniment bass line and chords by playing in traditional piano style.

How is AUTO 2 different from AUTO 1? In AUTO 1, the Auto-Accompaniment chords are triggered only by the chords you play with your left hand. In AUTO 2, your right hand notes trigger the chords and your left hand triggers the bass line of the Auto-Accompaniment.



Why is AUTO 2 valuable? There are two primary reasons:

a) Many people feel more comfortable playing chords with their right hand rather than their left. AUTO 2 suits that playing style better than AUTO 1 does.

b) With certain songs, AUTO 2 allows you to play notes directly from sheet music and still trigger the Auto-Accompaniment. Some songs will work better than others using AUTO 2.

It is important to note that the preset Auto-Accompaniment chords continue to play in AUTO 2. That is, you will hear the chords you play with your right hand plus the chords of the Auto-Accompaniment. Remembering this will help you to see the difference between AUTO 2 and the other Auto-Accompaniment modes.

Let's see how AUTO 2 works:

1. With the Rhythm stopped, press the **Rhythm** button and **Sound 1** button simultaneously. Then press the **#1** of the **numeric Selector** button. The display should begin to flash alternately between AUt and the number 01. This shows that the Auto-Accompaniment is currently set to AUTO1.
2. Press the **Tempo Up** button to change the number in the display to 02. This indicates that the FS780 is in AUTO2. Press the **Demo** button to escape from SYSTEM mode.
3. Press the **Auto** button until the display briefly flashes on. You may have to press the **Auto** button more than once before you actually see _on appear in the display. It will flash for less than a second as you press the **Auto** button.
4. Select a rhythm using the **Rhythm** button and the **numeric Selector** buttons. This time, try Rhythm pattern number 03 (SOFT FUSION). Select sound number 04 (E. PIANO 2) using the **Sound 1** button and the **numeric Selector** buttons.
5. Press the **Start/Stop** button. The rhythm will start. Try playing the music at left along with the rhythm.
6. As you play the example, notice that you can hear both the notes you're playing and the chords of the preset accompaniment. Most of the time, these will not clash. As you begin to play more advanced chords, you may find that the preset accompaniment chords cannot follow you.

Note: Here's some playing information about AUTO 2:

a) The Auto-Accompaniment changes when you press four or more keys (total) on the Lower and Upper Keyboards. See page Ap-1 for a chart of the chords that FS780 can recognize.

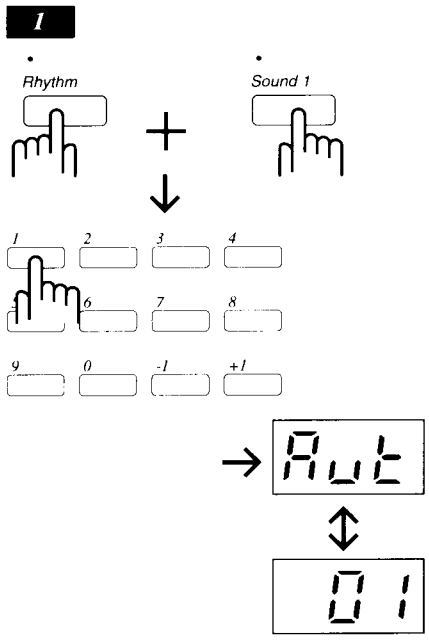
b) When you press only one key on the Lower Keyboard, only the Auto-Accompaniment ***bass*** part will change.

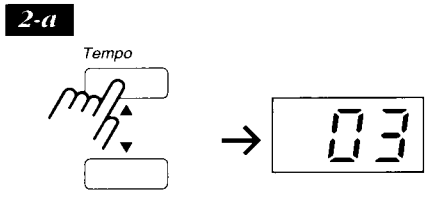
c) If you press more than one key on the Lower Keyboard, the bass part will respond to the ***lowest*** key pressed.

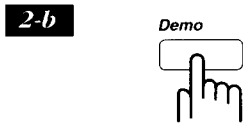
d) When only keys on the Upper Keyboard are pressed, pressing four or more keys will cause the Auto-Accompaniment to change. Pressing less than 4 keys in the Upper Keyboard will <u>not</u> affect the Auto-Accompaniment. This frees you to play melody lines without changing chords. When you're ready for a chord change, just play a complete chord along with your melody line.

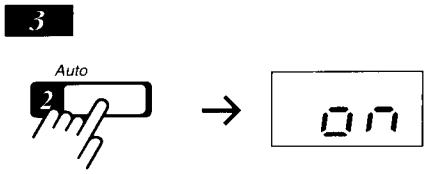
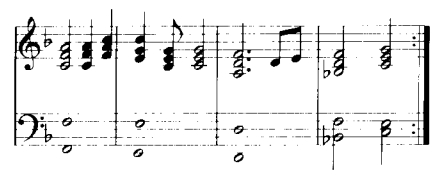
e) When AUTO 2 is activated, neither ONE FINGER AD-LIB nor DUET will function.

◆Explanation of AUTO 3









The key aspect of AUTO 3 is "freedom in choosing chords."

Like AUTO 2, this third Auto-Accompaniment mode lets you trigger the Auto-Accompaniment chords with your right hand and the Auto-Accompaniment bass line with the lowest note of your left hand. AUTO 3 is different in that the preset Auto-Accompaniment chords do not play. Rather, the chords you play with your right hand actually become part of the Auto-Accompaniment.

Furthermore, with AUTO 2, you are limited to only the chord forms that the FS780 can recognize as part of the Auto-Accompaniment system. If you play a chord that cannot be recognized in AUTO 2, the FS780 will do its best to match your chord, but you may not end up with the chord you wanted. With AUTO 3, any chord form you play can be recognized and become part of the Auto-Accompaniment. You have total freedom in choosing chords.

AUTO 3 is perfect for people who want to sing a melody as they play a background Auto-Accompaniment. You simply play block chords (or rhythmic chords) with both hands while you sing. The Auto-Accompaniment will follow the chords you play and respond with full Auto-Accompaniment.

Which AUTO Mode should I use?

Use AUTO 2 if you plan to use standard chords that can be recognized by the FS780 (see page Ap-1 for a chart of the chord forms that can be recognized). With AUTO 2, the preset Auto-Accompaniment chords will provide good rhythmic and harmonic support for the standard chords you play with your right hand.

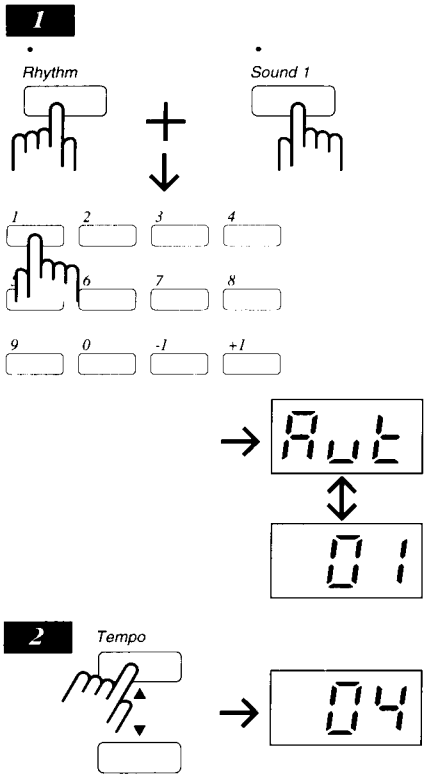
Use AUTO 3 when you plan to use complex chords that cannot be recognized by the FS780. Your complex chords will become part of the Auto-Accompaniment, and the preset Auto-Accompaniments chords (which do not play in AUTO 3) will not clash with chords you play with your right hand.

Let's try AUTO 3:

1. With the Rhythm stopped, press the **Rhythm** button and **Sound 1** button simultaneously. Then press the **#1** of the **numeric Selector** button. The display should begin to flash alternately between Aut and the number 01 (or 02).
2. Press the **Tempo Up** button to change the number in the display to 03. This indicates that the FS780 is in AUTO3. Press the **Demo** button to escape from SYSTEM mode.
3. Press the **Auto** button until the display briefly flashes on. You may have to press the **Auto** button more than once before you actually see on appear in the display. It will flash for less than a second as you press the **Auto** button.
4. If you haven't already done so in our AUTO 2 example, use the **Rhythm** button and the **numeric** keys to choose Rhythm #03 (SOFT FUSION). Also, select sound #04 (E. PIANO 2) using the **Sound 1** button and the numeric keys.
5. Press the **Start/Stop** button. The rhythm will start. Try playing the music at left along with the rhythm.
6. Try playing the music to one of your favorite songs and sing the melody. You'll like the result! Plus, AUTO 3 will allow the FS780 to follow every chord you play.

The playing information about AUTO 3 is the same as that of AUTO 2. Please refer to page A – 4

◆Explanation of AUTO 4



AUTO 4 is the best Auto-Accompaniment mode when you're not sure what chords to play. The FS780 has a preset chord sequence (the same one used with ONE FINGER AD-LIB) for each of the 100 Rhythms. You activate the preset sequence by pressing the notes of the Lower Keyboard (beginning with C1) in successive order. Here are the steps:

1. With the Rhythm stopped, press the **Rhythm** button and **Sound 1** button simultaneously. Then press the **#1** of the **numeric Selector** button. The display should begin to flash alternately between Aut and the number 01 (or 02 or 03).
2. Press the **Tempo Up** button to change the number in the display to 04. This indicates that the FS780 is in AUTO4. Press the **Demo** button to escape from SYSTEM mode.
3. Press the **Auto** button until the display briefly flashes on. You may have to press the **Auto** button more than once before you actually see on appear in the display. It will flash for less than a second as you press the **Auto** button.
4. Select Rhythm number 03 (SOFT FUSION) and sound number 04 (E.PIANO 2) as you did in the previous pages.
5. Press the **Sync./Fill In** button. The rhythm will not start until you press a key in the Lower Keyboard.
6. Now, count "ONE. . . TWO. . . THREE. . . FOUR" at the same tempo as the blinking red "Tempo" dot in the display. These are the "Beats" of the Auto-Accompaniment. Starting with the lowest "C" (called C1), hold each note of the Lower Keyboard in successive order (C. . . C#. . . D. . . D#) for four beats. You'll hear the chord sequence change as you move up the chromatic scale.

   With AUTO 4, you won't have to worry about chords. It lets you concentrate on making great melodies with your right hand.

◆Introducing Accompaniment Hold

Accompaniment Hold is an exciting new feature from KAWAI that allows you to control the rhythmic placement of Accompaniment Chords while you play. To operate Accompaniment Hold, you'll need to purchase a foot switch (model F-1, sold separately).

1. Connect the F-1 foot switch to the Accompaniment Hold jack on the rear panel.
2. Whenever you depress the foot switch pedal, the bass drum, open hi hat, bass, and chord will play in unison.
3. If you hold the pedal down, the bass and chord sounds will be held until you release the pedal.

When will the Auto-Accompaniment Hold feature be most useful?

a) When you want to add rhythmic variety to your accompaniment by holding some chords and letting others play normally;

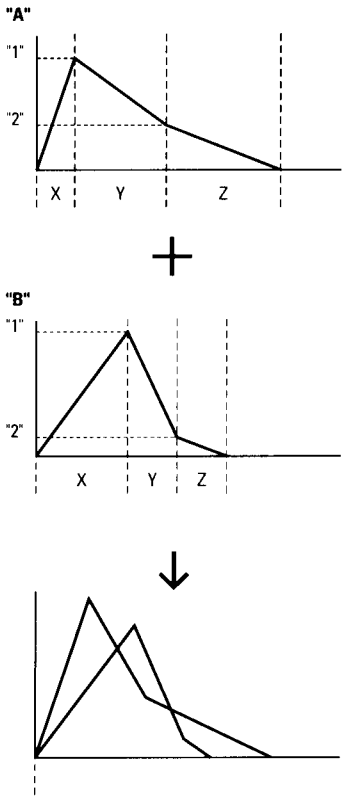
b) When you want to add syncopation to an accompaniment; and

c) When you want to add accents to an accompaniment.

Try Accompaniment Hold with several different Auto-Accompaniments to see how effectively it can add interest and excitement to your performances.

*Before moving on to the next section, press the the **Rhythm** button and **Sound 1** button simultaneously and use the **Tempo Down** button to return to AUTO 1.*

■ Creating Your Own Sounds:



The Synthesizer Function:

What is the synthesizer function?

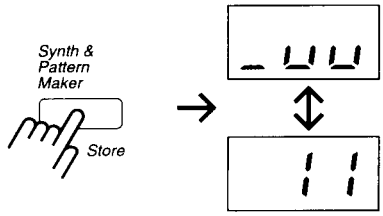
The built-in 11-parameter synthesizer allows you to create your own sounds and store them in the FS780's user memory. Before discussing the actual use of the synthesizer, let's take a look at the way the FS780's one hundred sounds are constructed. This information will be very helpful when you start to create your own sounds.

How sound is created on FS780

The shape of each sound is determined by a variety of elements called "Parameters". Let's look at how each parameter affects the sound.

1. **WAVE SELECT:**
   Every sound is composed of two waves, WAVE A and WAVE B, both of which are selected by changing the WAVE parameter. Each wave has a "Shape" which determines the character of its sound.
2. **ATTACK (LEVEL 1):**
   This parameter controls the respective attack volume levels of WAVEs A and B.
3. **ATTACK SPEED:**
   This parameter controls the amount of time it takes for WAVEs A and B to reach their peak volume levels after the key is struck. Sounds such as number 87 (VIBES) have a short attack, while sounds such as number 17 (SLOW VIOLIN) have a rather long attack.
4. **DECAY SPEED:**
   This parameter controls the amount of time it takes for WAVEs A and B to change from their respective peak volume levels to their sustain levels (the volume level that will be sustained for as long as the key is held down). Sounds such as number 85 (XYLOPHONE) have a very short decay, whereas sounds like number 01 (PIANO1) have a long decay.
5. **SUSTAIN (LEVEL 2):**
   This parameter controls the volume levels at which WAVEs A and B will be sustained while the key is held down. Sounds such as XYLOPHONE, which disappear even if you hold the key down, generally have SUSTAIN values of zero. The sustain volume of other sounds such as number 31 (JAZZ ORGAN) which continue to play as long as the key is held down can be controlled by changing their SUSTAIN values.
6. **RELEASE SPEED:**
   This parameter controls the amount of time it takes for the sound to disappear after the key is released. Sounds such as number 76 (COSMIC) have a very long release.

◆Changing the Parameters

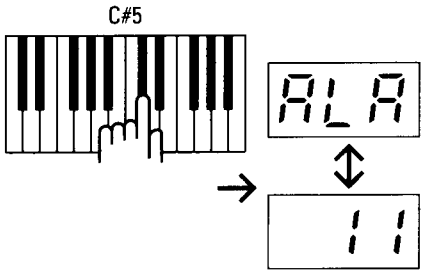


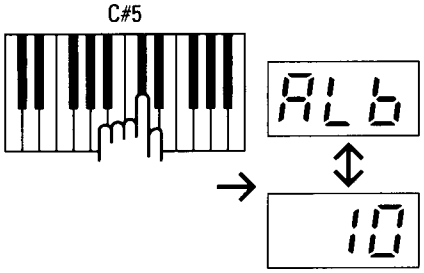
Now that you can understand the way sound is created on the FS780, let's discuss the method by which you can change parameters to create your own sounds. Parameters are selected using keys C5 through F5 on the right end of the keyboard. Once a parameter has been selected, its value can be changed using the **Selector** buttons.

First, use the **Selector** buttons to select the sound which you would like to modify by changing its parameters. Let's try changing the parameters for sound number 11 (BOW. STRINGS).

Check to be sure that the lamp above the **Sound 1** button is lit. (If not press the **Sound 1** button). Next, press the **Synth & Pattern Maker** button. The display will begin to flash, alternately reading _WW and 11.

The _WW represents a W, the first letter in WAVE. The number 11 indicates that WAVE combination number 11 has been selected. (Remember that each of the one hundred sounds in the FS780's *"100 SOUND LIBRARY"* is actually a combination of two WAVEs, WAVE A and WAVE B.) The WAVE number can be changed using the **Selector** buttons. (For example, if WAVE combination 00 is selected, the display will flash alternately between _WW and 00.)



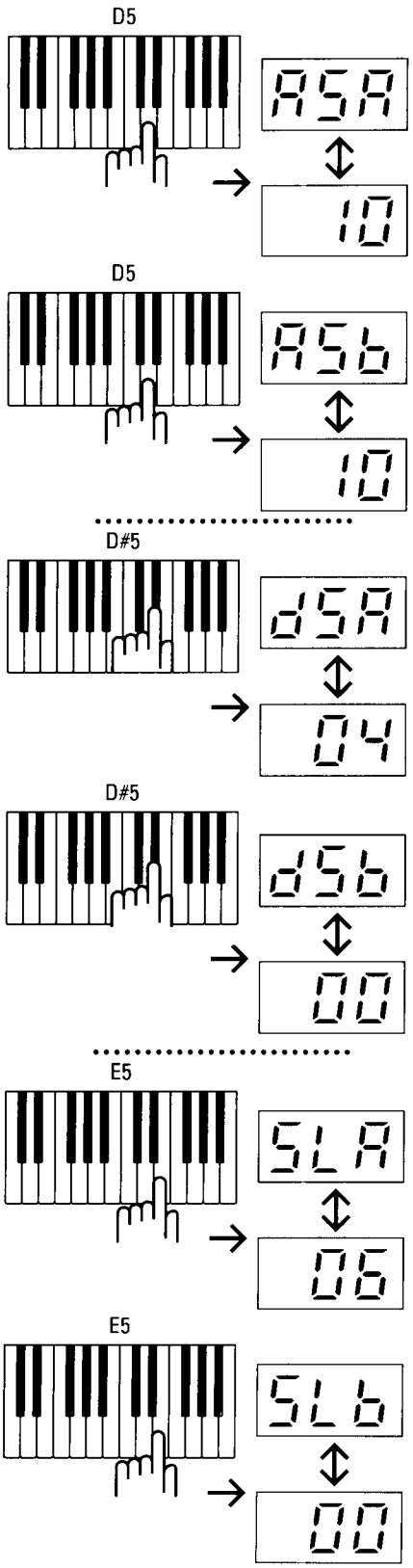


1. Changing the ATTACK (LEVEL 1)

Press the **C#5** key. The display should begin to flash alternately between AL A and the number 11. The "AL" in the display stands for "ATTACK LEVEL," and the "A" means that the value shown is the ATTACK LEVEL of WAVE A. Thus, the ATTACK LEVEL of WAVE A is 11. If you press the **Selector +1** button once, the number shown by the display should change to read 12.

Next, try pressing the **C#5** key once again. The display should begin to flash alternately between AL b and the number 10. Again, the "AL" in the display stands for "ATTACK LEVEL" and the "b" is a lower case letter "B" indicating WAVE B. This indicates that the ATTACK LEVEL of WAVE B is 10. Use the **Selector +1** button to change the number to 15.

You have now made WAVE B (at 15) louder than WAVE A (at 12).



2. Changing the ATTACK SPEED

Press the **D5** key. The display should begin to flash alternately between ASA and the number 10. The "AS" in the display stands for "ATTACK SPEED," and the second "A" means that the value shown is the ATTACK SPEED of WAVE A. Thus, the ATTACK SPEED of WAVE A is 10. Use the **Selector -1** button to change the number to 02.

Next, try pressing the **D5** key once again. The display should begin to flash alternately between ASb and the number 10. This indicates that the ATTACK SPEED of WAVE B is 10. Use the **Selector -1** button to change the number to 01.

Try playing a lower key on the FS780 (away from the User Program section). You'll hear that the BOW. STRINGS sound now has a much slower attack than it did previously.

3. Changing the DECAY SPEED

Press the **D#5** key. The display should begin to flash alternately between dSA and the number 04. The "dS" in the display stands for "DECAY SPEED," and the "A" means that the value shown is the

DECAY SPEED of WAVE A. Thus, the DECAY SPEED of WAVE A is 4. Use the **Selector -1** button to change the number to 00.

Next, try pressing the **D#5** key once again. The display should begin to flash alternately between dSb and the number 00. This indicates that the DECAY SPEED of WAVE B is 0. Use the **Selector +1** button to change the number to 10.

Hold down one of the FS780's lower keys (away from the User Program section). After holding for about one second, you'll hear WAVE B drop suddenly in volume. That's because you have assigned it a faster DECAY speed than WAVE A.

4. Changing the SUSTAIN (LEVEL 2)

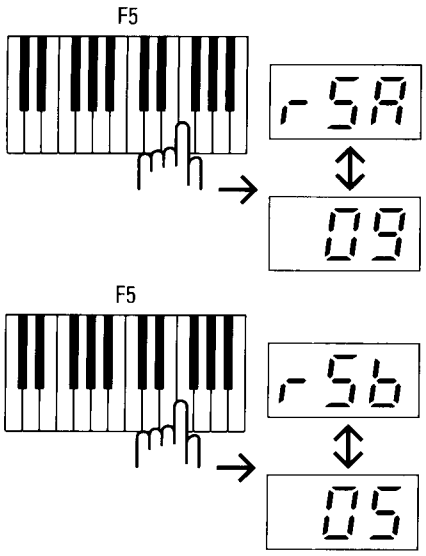
Press the **E5** key. The display should begin to flash alternately between SLA and the number 06. The "SL" in the display stands for "SUSTAIN LEVEL," and the "A" means that the value shown is the

SUSTAIN LEVEL of WAVE A. Thus, the

SUSTAIN LEVEL of WAVE A is 6. Use the **Selector +1** button to change the number to 08.

Next, try pressing the **E5** key once again. The display should begin to flash alternately between SLb and the number 00. This indicates that the SUSTAIN LEVEL of WAVE B is 0. Use the **Selector +1** button to change the number to 08.

Hold a lower key once again. After about one second, you'll notice that the volume of WAVE B drops suddenly --- but not as low as WAVE A's volume level.



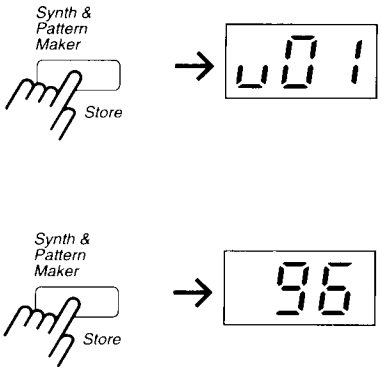
5. Changing the RELEASE SPEED

Press the **F5** key. The display should begin to flash alternately between r 5A and the number 09. The "r 5" in the display stands for "RELEASE SPEED," and the "A" means that the value shown is the RELEASE SPEED of WAVE A. Thus, the RELEASE SPEED of WAVE A is 09. Use the **Selector -1** button to change the number to 04.

Next, try pressing the **F5** key once again. The display should begin to flash alternately between r 5b and the number 05. This indicates that the RELEASE SPEED of WAVE B is 05. Use the **Selector -1** button to change the number to 02.

Now, try pressing one of the lower keys on the keyboard. The sound that you now hear is quite different from the original sound, BOW. STRINGS. By changing the RELEASE SPEED parameter, you have lengthened the sound so that it continues to play after the key is released. Let's save this new sound using the procedure described on the next page.

◆Storing Your New Sound:



Storing sounds

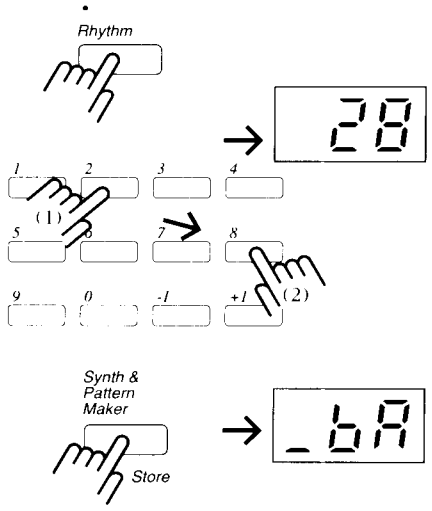
Now you're ready to store your newly created sound in the FS780's user memory.

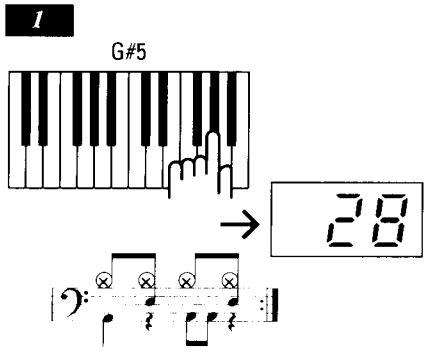
1. Press the **Store** button (same button as the **Synth & Pattern Maker** button). The display should change to read u01.

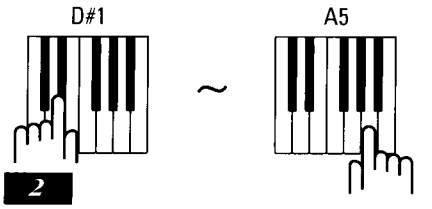
   It is possible to store up to five sounds created using the synthesizer function. Those five sounds will be stored as sounds 96 through 100, which are listed as USER 1 through USER 5 in the *"100 SOUND LIBRARY"* on the FS780's front panel. Therefore, the number "01" in the display indicates that USER 1 has been selected. You can use the **Selector +1** button to change this number to any value between 1 and 5. Let's leave it at 1 for now.

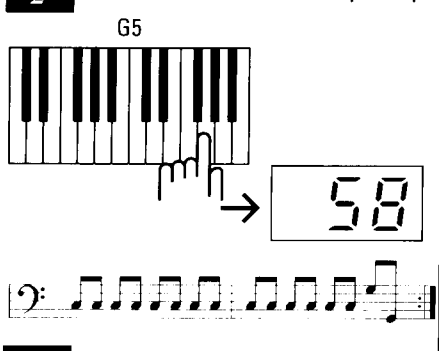
2. Press the **Store** button one more time. The sound you just created will be stored as sound number 96 (USER 1). Try using the **Selector** buttons to select this sound. When you press a key, you should hear the sound you just created.

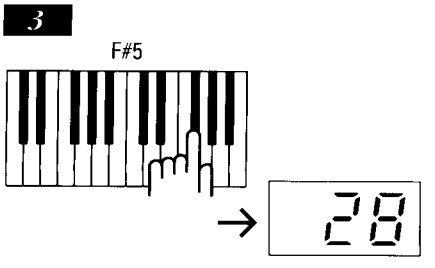
Pattern Maker: Creating Rhythm and Auto-Accompaniment Patterns











Have you ever wished you could take your own musical ideas and put together a dynamite Auto-Accompaniment pattern of your own? With the FS780, you can!

Using the programming functions of the FS780, it is possible for you to create Intro, Fill-in, Ending, and Basic patterns for each of the FS780's Auto-Accompaniment parts: rhythm, bass, and chords. You can build these patterns from scratch, or you can alter one or more elements (chord, bass, drums) of a preset pattern. This is an extremely powerful feature that offers you tremendous creative freedom!

As an example, let's try making a few changes to Rhythm number 28 (POP ROCK) to develop a new pattern.

1. Use the **Selector** buttons to select the POP ROCK pattern (number 28).
2. Let's begin by changing the Basic pattern.

   Check to be sure that the lamp above the **Rhythm** button is lit.

   With the rhythm turned OFF, press the **Synth & Pattern Maker** button. The display will change to read _bA, which is short for "Basic." This indicates that the Basic pattern has been selected.

1. First, let's change the Rhythm pattern

Find the **User Program** keys at the right end of the keyboard which are identified by PATTERN MAKER above the keys (F#5 to A5). These are the **User Program** keys for changing accompaniments.

Press the **G#5** key (labelled "RHYTHM CLEAR"). The display should change to show the number of the POP ROCK pattern (that is, number 28).

The basic Rhythm pattern for the POP ROCK pattern is at left:

Let's try adding the high clap sound on top of the snare drum. Just press the **D#1** key, which controls the high clap sound, in time with the snare drum (on beats 2 and 4).

Feel free to add other rhythm sounds as you like.

If you make a mistake with one sound for example, (high clap), use the **Rhythm Erase** key (A5) to remove the mistake. Hold down the **Rhythm Erase** key (A5) while you press the "high clap" key (D#1). All high clap sounds will be instantly erased.

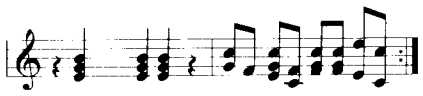
2. Next, let's change the Bass part

If you're finished with the Rhythm pattern, let's move on to the bass pattern. Press the **G5** key (labelled "BASS CLEAR") on the keyboard twice (see note at bottom of page). The bass pattern should disappear, and the display will change to show the number 58. This indicates that sound number 58 (E. BASS) is the sound being used for the bass part in this pattern.

Let's create a bass part like the one given at left. Use the keys from C1 to B4 to input the bass part. If you want to use a sound other than E. BASS for the bass part, select the sound you prefer using the **numeric** keys to change the sound number shown in the display. You should also use the **Bass Volume** buttons to set the volume of the bass part at this time.

3. Last, let's change the Chord part

Press the **F#5** key (labelled "CHORD CLEAR"). The number 28 should appear in the display. This indicates that sound number 28 (FAT BRASS 2) is being used for the Chord part.

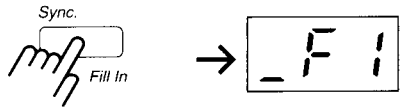
The basic Chord part for the POP ROCK pattern is as shown at left. Let's try adding the eighth notes shown at left to the last beat of the second measure. Use the keys from C1 to B4 to input the Chord part.

If you want to use a sound other than FAT BRASS 2 for the Chord part, select the sound you want using the numeric keys to change the sound number shown in the display. You should also use the **Chord volume** buttons to set the volume of the Chord part at this time.

Thus far, we have changed each of the elements (rhythm, bass, chord) of the POP ROCK Basic pattern --- but we have not yet stored the revised pattern in the FS780's user memory. Before we cover the procedure for storing, let's change the Fill-in and Intro/Ending patterns as well.

As you've probably observed by now, pressing the USER PROGRAM PATTERN MAKER keys (F#5, G5, G#5) once lets you add to that portion of the existing pattern. Pressing the same key a second time erases that portion of the pattern allowing you to rebuild it from scratch.

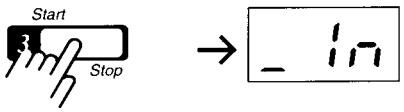
◆Creating Fill-in and Intro/Ending Patterns:

Fill-in and Intro/Ending patterns can also be changed using the same procedure that you used to change the Basic pattern in the previous page.



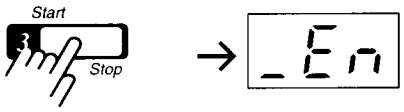
1. Let's try changing the Fill-in pattern

With Rhythm #28 (POP ROCKS) still selected, press the **Sync./Fill In** button. The display should change to read _F 1 and you should hear the POP ROCK Fill-in pattern. Try to change this Fill-in pattern to suit your taste using the same procedure that you used to change the Basic pattern.



2. Last, let's change the Intro and Ending patterns

If you press the **Start/Stop** button twice, the display should change to read _ In and , you will hear the POP ROCK Intro pattern. Press it once more and you will hear the Ending patterns. Go ahead and edit these patterns as you like using the same procedure as before.



When creating difficult patterns, feel free to slow down the tempo for input, then speed it up again when performing.

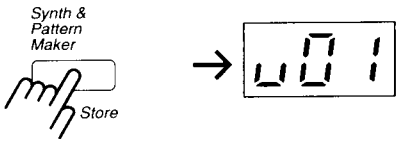
The same bass and chord sounds will be used for all four pattern types (Basic, Intro, Fill-in, and Ending) of a single Auto-Accompaniment pattern. The last sounds you choose for the Bass and Chord parts are the ones that will be memorized when you store the pattern. For example, if you had chosen E. BASS for the bass part sound when creating the Basic pattern, but later changed it to A. BASS when creating the Ending pattern, then A. BASS will be memorized as the bass part sound for all four of the patterns. Note also that the SPLIT sounds, those numbered 41 through 50, cannot be chosen as the Bass or Chord part sounds.

*If you incorrectly enter one or more notes while creating any part of the Auto-Accompaniment pattern, just press the **CLEAR** key for that part and all of the notes that you input will be erased. (For example, if you press the **G5** key while creating the bass part for a pattern, the entire bass line will disappear.) You can use the **RHYTHM ERASE** key to remove individual rhythm sounds from a Rhythm pattern. (For example, to remove only the closed hi-hat sound from a Rhythm part, hold down the **A5** key and press the **F#1** key, which controls the closed hi-hat sound. That sound will be removed from the Rhythm pattern.)*

*As mentioned in an earlier note, the **CLEAR** key for each part operates in two ways. When pressed once, the original pattern for that part remains unchanged and you can actually add notes to the part.*

*When you press the **CLEAR** key a second time, all the notes for that part will be erased --- allowing you to build an entirely new part from scratch. If you want to change the original pattern to something entirely different, however, press the **CLEAR** key two times to erase the entire part.*

◆Storing Your New Patterns



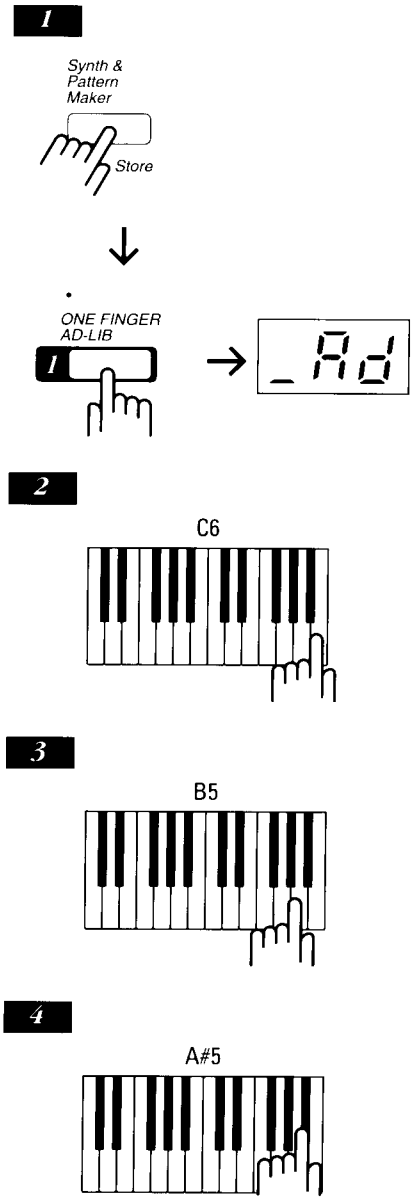
Now that we've create an entirely new pattern, let's store it in the FS780's user memory using the following procedure:

1. With your new pattern set just the way you want it, press the **Store** button (same button as the **Synth & Pattern Maker** button). The display should change to read u01.

   It is possible to store up to five patterns which you create. Those five patterns will be stored as patterns 96 through 00, which are listed as USER 1 through USER 5 in the "100 RHYTHM LIBRARY" on the FS780's front panel. Therefore, the number "u01" in the display indicates that USER 1 has been selected. You can use the **Selector** buttons to change this number to any value between 1 and 5. Let's store our pattern as number 1 this time.

2. Press the **Store** button one more time. The pattern you just created will be stored as pattern number 96 (USER 1). Try using the numeric keys to select this pattern. Now, when you press a note in the Lower Keyboard with Auto-Accompaniment on, you should hear the pattern you just created.

■Programmable ONE FINGER AD-LIB:
◆Creating Phrases



With the FS780's new programmable ONE FINGER AD-LIB capability, you have the power to create up to 85 different ONE FINGER AD-LIB phrases of your own. Here's how:

1. Check to be sure that the lamp above the **Rhythm** button is lit.

Then, press the **Synth & Pattern Maker** button. Next, press the **ONE FINGER AD-LIB** button. The letters _Ad, which are short for "Ad-lib," will appear in the display.

The Ad-lib phrase for the **G2** key should also begin to play.

2. Select the phrase which you want to modify by pressing the key for that phrase in the ONE FINGER AD-LIB section of the keyboard.

The Ad-lib phrase you've selected will begin to play.

The sound number for that phrase will be shown in the display. When you're ready to erase the phrase you've selected, press the **C6** key (PHRASE CLEAR) and that phrase will disappear.

3. Inputting the new phrase.

Use the keys from C1 to B4 to input the new phrase.

If you find that this range isn't high or low enough to play the Ad-lib phrase you have in mind, press the **B5** (OCTAVE SHIFT) key. This key can be used to shift the range played by the keys from C1 to B4 up or down an octave, as shown in the diagram left.

Pressing the **OCTAVE SHIFT** key one time causes the keyboard to shift up one octave. Pressing a second time causes the keyboard to shift down one octave. Pressing a third time restores the keyboard to the normal pitch.

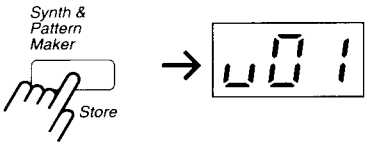
Now use the **numeric** keys to select a voice for the phrase. The length of a ONE FINGER AD-LIB phrase is limited to one measure.

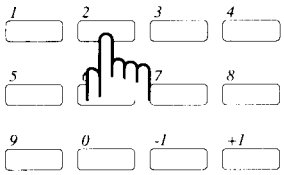
4. Inputting additional Ad-Lib phrases.

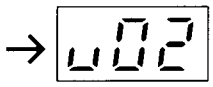
Suppose you want to input a second Ad-Lib phrase. To do this, make sure that your first customized Ad-Lib phrase (from Step 3 above) is finished. Now, press the **POINT SELECT** key (A#5). This tells the FS780 that you are done with the current phrase.

Now, repeat Steps 2 and 3 above to input a new Ad-Lib phrase. When you are done with this second phrase, press the **POINT SELECT** key again. You can continue this process until all 17 Ad-Lib keys have been programmed with your own customized phrases.

◆Storing Phrases







You can change any number of ONE FINGER AD-LIB phrases for a given rhythm --- up to seventeen for each Rhythm pattern. When you're finished changing the phrases, you can store them for future use using the procedure below.

Storing ONE FINGER AD-LIB phrases

1. Press the **Store** button (same button as the **Synth & Pattern Maker** button). The display should change to read u01.

   The ONE FINGER AD-LIB phrases you create must be stored with the Rhythm patterns that accompany them.

   (Therefore, if you also want to change the rhythm pattern, you should refer to the Pattern Maker section and change the Rhythm now before showing the new phrases).

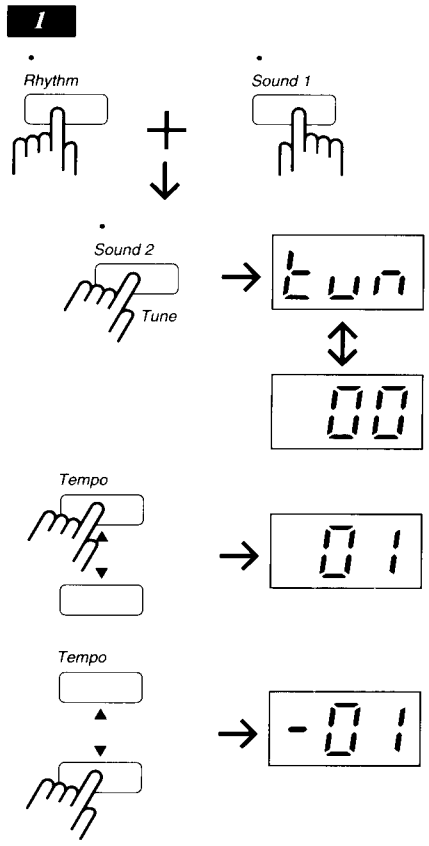
   It is possible to store up to five patterns (and their accompanying ONE FINGER AD-LIB phrases) which you create. Those five patterns will be stored as patterns 96 through 00, which are listed as USER 1 through USER 5 in the "100 RHYTHM LIBRARY" on the FS780's front panel. Therefore, the number "u01" in the display indicates that USER 1 has been selected. You can use the numeric keys to change this number to any value between 1 and 5. Let's store our new pattern as number 2.

2. Press the **Store** button one more time. The pattern (with the new ONE FINGER AD-LIB phrases you just created) will be stored as pattern number 97 (USER 2). Try using the **Rhythm** button and the **numeric** keys to select this pattern. Make sure that the **ONE FINGER AD-LIB** button and the **Auto** button are in the ON position. Press **Start/Stop** button. When you press the ONE FINGER AD-LIB key on which you created the new phrase, you should hear your newly created phrase.

⚠ *The patterns listed as USER 1 through USER 5 in the "100 RHYTHM LIBRARY" section are used for storing both the Auto-Accompaniment patterns and the ONE FINGER AD-LIB phrases that you create. Therefore, if you had saved the Ad-lib phrases created above as USER 1, the modified version of the POP ROCK rhythm pattern (which you created and stored as USER 1 previously) would be erased, and the Auto-Accompaniment rhythm pattern you selected in order to create the Ad-lib phrases would take its place. If you would like to create ONE FINGER AD-LIB phrases to go with a rhythm of your own invention, then you should edit and store the rhythm in advance on one of the user memories. Then, select this user rhythm when you are ready to create the Ad-lib phrases.*

It is possible to input up to about 300 notes for a single Auto-Accompaniment pattern (combined total for Basic, Intro, Fill-in, Intro and Ending patterns), and up to about 270 notes for all the ONE FINGER AD-LIB phrases for a single pattern (combined total for seventeen phrases).

Using the SYSTEM Functions:



In this section we will outline the FS780's SYSTEM functions (which are concerned with the overall control of the Keyboard).

SYSTEM Functions

The SYSTEM functions include:

1. TUNING CONTROL (pitch adjustment)
2. TRANSPOSE (key change)
3. Selecting among the four types of Auto-Accompaniment. (Please see the section on "Advanced Use of Auto-Accompaniment Section" in page A-3.)
4. TOUCH TYPE SELECT: Allows you to select from among the three different touch settings.
5. PEDAL 1 FUNCTION SELECT: Allows you to assign a function to the PEDAL 1 jack.
6. PEDAL 2 FUNCTION SELECT: Allows you to assign a function to the PEDAL 2 jack.

1. TUNING CONTROL

Press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **Sound 2** button. The display should begin to flash, alternately showing the letters tun (short for TUNE) and the number 00.

If you press the **Tempo Up** button once, the number in the display will change to read 01 and the pitch will raise slightly. If you press the **Tempo Down** button instead, the number will change to -01 and the pitch will drop. You can use the TUNE function to adjust the FS780's pitch within a range of -08 to 07.

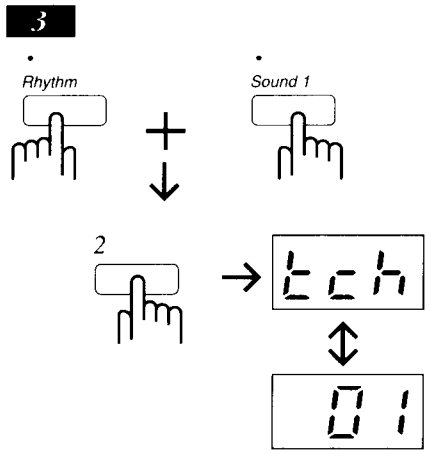
Press the **Demo** button to leave the SYSTEM mode.

2. TRANSPOSE

Press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **Regis.** button. The display will begin to flash, alternately showing the letters trn (short for TRANSPOSE) and the number 00.

If you press the **Tempo Up** button, the number in the display will change to read 01 and the pitch will raise by a half step. If you press the **Tempo Down** button instead, the number will change to -01 and the pitch will drop by a half step. You can use the TRANSPOSE function to adjust the FS780's pitch by a full octave upward or downward (that is, from -12 half steps to +12 half steps).

Press the **Demo** button to leave the SYSTEM mode.



3. TOUCH TYPE SELECT

You can select from among the three different *"touch"* settings.

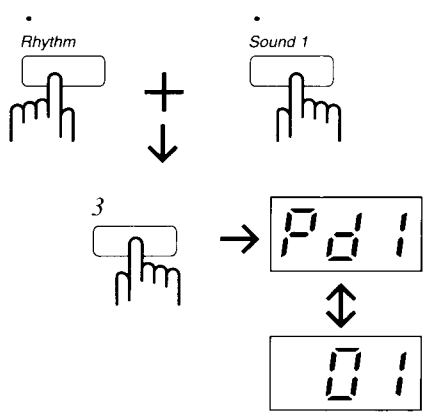
01: For a wide dynamic range, providing greater contrast between loud and soft playing.

02: Offers a narrow dynamic range with less contrast between loud and soft playing.

03: Touch Response is de-activated. Each key will play at the same volume level no matter how you strike the key.

Press the **Rhythm** button and the **Sound 1** button simultaneously. Then, press the **#2** button in the **Selector** section. The display will begin to alternate between "tch" and "01". The "tch" stands for "TOUCH TYPE" and "01" lets you know that the current touch setting is "01". Use the **Tempo** buttons to select either of the other two touch settings.

Press the **Demo** button to leave the SYSTEM mode.



4. PEDAL 1 FUNCTION SELECT:

Allows you to assign a function to the PEDAL 1 jack. Press the **Rhythm** button and the **Sound 1** button simultaneously. Then, press the **#3** button in the **Selector** section. The display will begin to alternate between "Pd 1" and "01" letting you know that the current PEDAL 1 Function is 01.

If you connect the optional footswitch (model F-1, available separately) to the PEDAL 1 jack, the footswitch will control the SUSTAIN function. Use the **Tempo** buttons to select from the other types of functions for the PEDAL 1 jack.

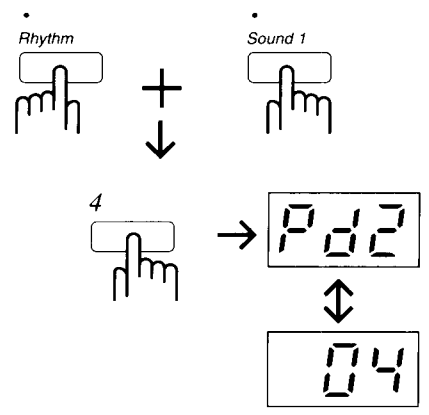
01: Sustain pedal

02: Pedal functions like the **Sync./Fill In** button on the front panel

03: Pedal functions like the **Arr. Exp.** button on the front panel

04: Accompaniment Hold pedal

Press the **Demo** button to leave the SYSTEM mode.



5. PEDAL 2 FUNCTION SELECT

Allows you to assign a function to the PEDAL 2 jack. Press the **Rhythm** button and **Sound 1** button simultaneously. Then press the **#4** button in the **Selector** section. The display will then begin to alternate between "Pd2" and "04" letting you know that the current PEDAL 2 Function is 04.

If you connect the optional footswitch (model F-1, available separately) to the PEDAL 2 jack, the footswitch will work as an ACCOMPANIMENT HOLD pedal. Use the **Tempo** buttons to select from the other types of functions for the PEDAL 2 jack.

Press the **Demo** button to leave the SYSTEM mode.

■Using the MIDI Functions

MIDI Functions

In this section, we will outline the FS780's MIDI functions (which allow you to connect the FS780 to other MIDI instruments).

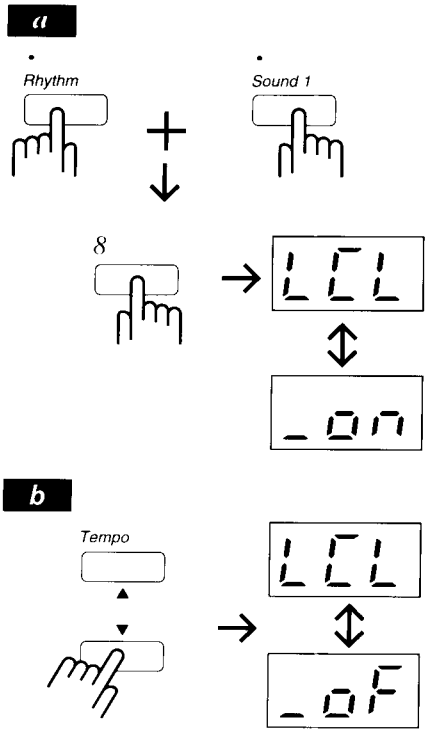
Upon seeing the word "MIDI," many people may think: "This section has nothing to do with me!" or "MIDI is too difficult to bother with!" However, if you try using the FS780's MIDI functions, you're sure to find that MIDI is a fun and useful tool for making music. The FS780 is loaded with MIDI functions. If you don't use them, you're missing out on a lot of the fun the FS780 has to offer!

However packed the FS780 may be with exciting MIDI functions, they are not much use if the FS780 is the only instrument you're using. These MIDI functions are used to connect the FS780 to other MIDI equipment. In this section we will give you some examples of how this is done.

■ Connecting the FS780 to another MIDI keyboard or tone generator module

First, connect the FS780 MIDI OUT jack to the MIDI IN jack of another keyboard or tone generator. Make sure that the FS780's MIDI transmit channel matches the MIDI receive channel of the tone generator or other keyboard. Then, pressing a key on the FS780's keyboard will cause both the FS780 and the other instrument to play a sound simultaneously. Or, if you connect the FS780 to a keyboard which has a multi-timbral function (which would allow it to receive signals over a number of different MIDI channels at once), you can play the FS780's Auto-Accompaniment and Rhythm patterns through the other instrument as well.

◆Setting the Local Control ON/OFF



Using Local Control, you can determine whether or not the FS780 produces sound when the keys are played. Why would you want to turn off the FS780's sound? When using MIDI, the FS780 can operate as a "controller"; used to control the sound of another MIDI-equipped keyboard. In this situation, you may want to play the FS780's keys but hear only the sound of the "slave" keyboard that is being controlled through MIDI.

■ Using the MIDI Functions: Setting the Local Control ON/OFF

When Local Control is "ON", you will hear the FS780's sound when the keys are played. When Local Control is "OFF", MIDI note Information is still sent as you play, but no sound is heard through the FS780's speakers.

To select Local ON/OFF, use the following procedure:

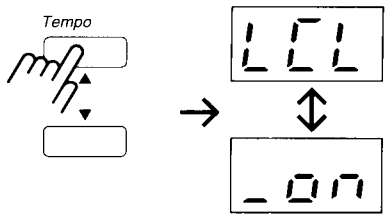
a) LOCAL CONTROL ON

Press the **Rhythm** button and the **Sound 1** button simultaneously. Then, press the **#8** button in the **Selector** section. The display will begin to flash alternately between "LCL" and "_on". The "LCL" stands for Local Control; and the "_on" indicates that Local Control is set to "on". In this setting, you will hear sound when the FS780's keys are played.

b) LOCAL CONTROL OFF

Next, try pressing the **Tempo Down** button. The display will change to flash alternately between LCL and _oF. This indicates that the Local Control is off and no sound will be heard when the FS780's keys are played

c



d

Remember, MIDI data is still sent when you play the FS780's keys. So, if the FS780 is connected to another keyboard through MIDI (the FS780's MIDI Out jack to the other keyboard's MIDI In jack with a MIDI cable), you should hear notes sounding on the other keyboard as you play keys on the FS780.

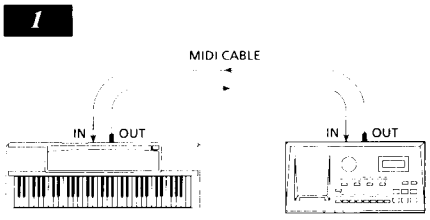
c) RETURNING TO LOCAL CONTROL ON

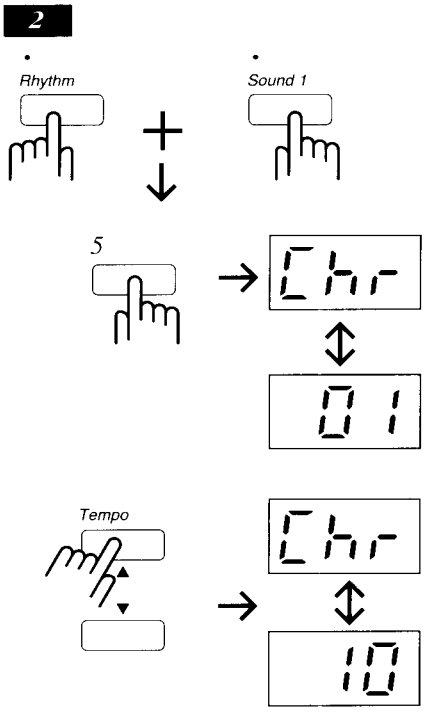
To turn Local Control "ON" once again, simply press the **Tempo Up** button. If your other keyboard is still connected via MIDI, you should hear both keyboards produce sound as you play keys on the FS780.

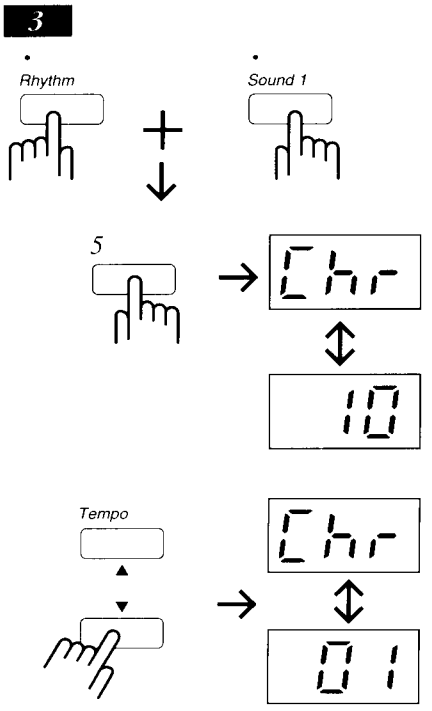
d) LEAVING THE LOCAL CONTROL ON/OFF MODE

To leave the Local Control mode, press the **Demo** button

Creating Songs







When using the FS780's MIDI functions, you can create a song with four parts plus a drum part. These four parts can all play together from the beginning of the song to the end of the song, just as the melody you play by hand and the Auto-Accompaniment part play together from the start of a song to its end.

1. First connect the FS780 to a sequencer

Connect the FS780 to a sequencer as shown in the diagram at left.

2. Create a drum part

Press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **#5** button in the **Selector** section. The display will begin to flash, alternately showing Chr and 01.

Use the **Tempo Up** button to change the 01 to 10. This changes the FS780's MIDI Transmit channel to channel 10.

Press the **Demo** button to leave the SYSTEM mode.

Then, select sound number 90 using the **Selector** buttons.

If you start the sequencer recording now, you can use the FS780 keys to record a drum part. If you raise or lower the volume while recording using the Rhythm volume buttons, these changes will also be recorded by the sequencer.

3. Create the other parts

If you have left the SYSTEM/MIDI mode, press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **#5** button in the **Selector** section. The display will begin to flash, alternately showing Chr and 10.

Use the **Tempo Down** button to change the 10 to 01.

Press the **Demo** button to leave the SYSTEM mode.

The FS780's MIDI Transmit channel is now set to channel 1. If you press one of the keys on the keyboard, the keyboard will play whatever sound is currently selected. Use the **Selector** buttons to select the sound of your choice.

Now you can use the sequencer to record the part for that sound. Volume changes made using the **Volume** buttons for each part will be recorded by the sequencer as before.

To record other parts, use the **Tempo** buttons as before to change the MIDI Transmit channel to any channel from 2 through 4. Then, select the sound you will use for the new part and record it as before. Of course, if you change the sound you are using in the middle of the recording, the sound change will also be recorded. Therefore, it is not necessary to assign three solos – say, a sax solo, a guitar solo, and an organ solo – to three separate channels. You can record them all on one channel by simply changing the sound as you record.

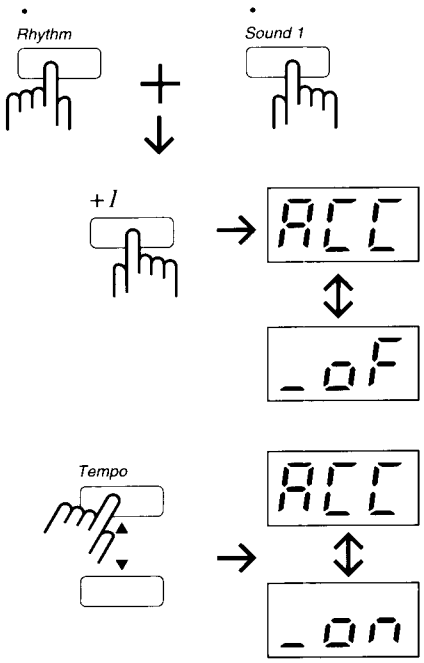
To summarize, drums can be recorded by your external sequencer when the FS780 is set to MIDI Transmit channel 10. Other sounds are recorded when you use MIDI Transmit channel 1 through 4.

This gives you five multi-timbral channels for recording separate tracks.

*If you raise or lower the volume while recording using the **Master Volume** buttons, these changes will not be recorded by the sequencer.*

◆Sending Automatic Functions

During normal operation, the FS780 does not send (transmit) automatic information (Auto-Accompaniment and ONE FINGER AD-LIB) via MIDI. You can, however, enable the FS780 to send this information by using the following function.



■ Using a sequencer to record the FS780's automatic functions. (Auto-Accompaniment, ONE FINGER AD-LIB).

Press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **+1** button in the **Selector** section. The display should begin to flash, alternately showing the letters ACC and _oF.

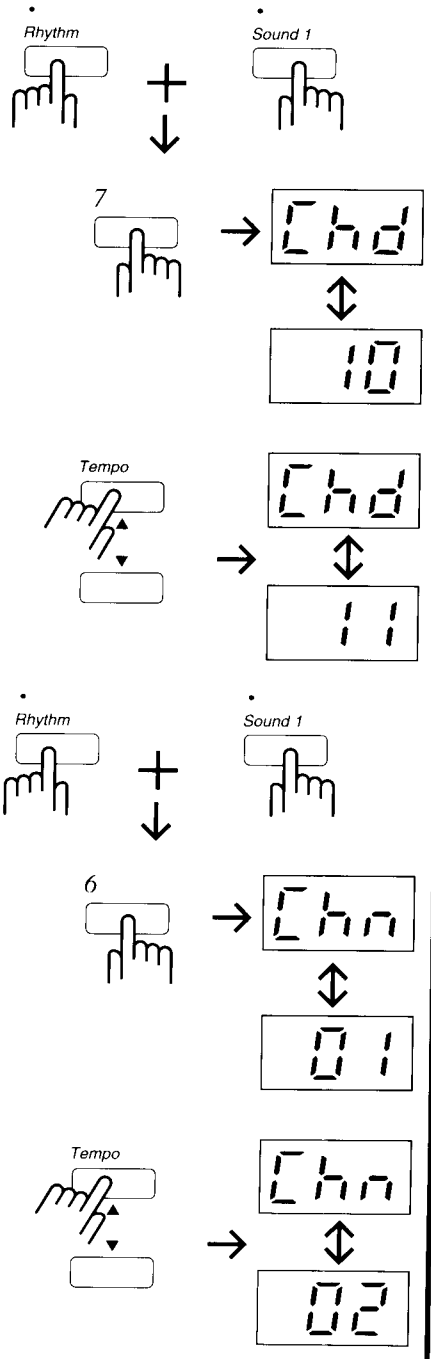
The ACC stands for Accompaniment. The _oF signifies that the FS780 is not currently sending "Automatic" information via MIDI.

If you press the **Tempo Up** button, the _oF should change to read _on. This indicates that the Auto-Accompaniment data will be transmitted via the MIDI connection.

You may now start the sequencer recording and begin your performance. Each part will be sent to the sequencer by way of a different MIDI channel, as shown below:

Channel	Part
1	SOUND1 (Your melody, ONE FINGER AD-LIB)
2	SOUND2 (Your melody, ONE FINGER AD-LIB)
3	Chord part
4	Bass part
10	Rhythm part

On playback, your performance should sound exactly the same as it did when you recorded it.



■ Changing MIDI Channels

At some point during recording, you may find it necessary to change the MIDI channel for a specific part. Here's how it can be done:

When the ACC is set to"_oF", the FS780 receives MIDI data on several channels but transmits on only one MIDI channel (referred to as "r"). The MIDI channel assignments are found below:

Transmit Channel=	r (see page A-20 to adjust the "r")
Receive Channel of Sound 1=	n (see the following explanation to adjust the "n")
Sound 2=	n+1
Chord=	n+2
Bass=	n+3
Rhythm=	d (see the following explanation to adjust the "d")

When the ACC is set to "_on", the FS780 will both transmit and receive MIDI data on the same MIDI channels. The channel assignments are:

Sound 1 = n, Sound 2 = n+1, Chord = n+2, Bass = n+3, Rhythm = d.

- **To change the Rhythm part channel**

  Press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **#7** button in the **Selector** section. The display will flash alternately between Chd (which is an abbreviation for "Channel, Drum") and 10. This indicates that the Rhythm part is being output through channel 10. If you use the **Tempo Up** button to change the number in the display to read 11, the Rhythm part will be output through channel 11.

  Press the **Demo** button to leave the SYSTEM mode.

- **To change the channels of the other parts**

  Press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **#6** button in the **Selector** section. The display will flash alternately between Chn and 01. This indicates that the melody and ONE FINGER AD-LIB phrases you play using SOUND 1 will be output through channel 1.

  If you use the **Tempo Up** button to change the display to read 02, then the melody and ONE FINGER AD-LIB phrases you play using SOUND 1 will be output through channel 2; the melody and ONE FINGER AD-LIB phrases you play using SOUND 2 will be output through channel 3; the Auto-Accompaniment Chord part will be output through channel 4; and the bass part will be output through channel 5.

  You can see that the channel number for melody using SOUND 1 determines the channels for the other three sounds – which are assigned to the next three successive channels.

  In other words, if the channel which outputs the melody and ONE FINGER AD-LIB phrases is channel "N", then SOUND 2 outputs through channel N+1; the Chord part outputs through channel N+2; and the bass part outputs through channel N+3.

  The number shown in the display is the channel number N.

  Press the **Demo** button to leave the SYSTEM mode.

◆Creating Patterns

Suppose you want to create a complete Accompaniment pattern on an external sequencer (such as KAWAI's professional MIDI sequencer, the Q-80) and store it in the FS780's user memory for use with the Auto-Accompaniment feature. Here's how it can be done:

■ Recording Auto-Accompaniment patterns created with an external sequencer for use with the FS780

⚠ *Quantize is set to ♩ = 24.*

1. First, program the Accompaniment pattern into your external sequencer. Remember that the Intro and Fill-in patterns you create should be one measure long. The Basic and Ending patterns should be two measures long.
2. Next, make sure that the external sequencer's Playback (Transmit) channels and Rhythm, Chord and Bass channels of the FS780 are the same.
3. Use the **Tempo Down** button to change the display until it reads SYC (short for "SYNC.").
4. Prepare the FS780 to record the pattern into user memory. Record the Rhythm part first. Begin by pressing the **Synth & Pattern Maker** button, just as you did when you created an Auto-Accompaniment pattern. Then, select which of the four pattern types (Basic, Intro, Fill-in, or Ending) you are going to record from the sequencer. Then, select the Rhythm part by pressing the G#5 key. Now the FS780 is set to record your pattern from the external sequencer. When you playback the Rhythm pattern from the external sequencer, the FS780 will begin recording in SYNC with the sequencer.
5. Record the other parts (chord, bass) once again, making sure that your Playback (Transmit) channels for chords and bass are matched with the appropriate channels on the FS780. The chords should be set to transmit from the external sequencer on channel N+2. The bass should transmit on channel N+3. (Refer to page A – 22 of this manual to review the channel assignment procedure for the FS780.)
   1) Repeat Steps 3 and 4 above to prepare the FS780 for recording. Select the appropriate pattern type. Remember that Intro and Fill-in patterns should be one measure long while Basic and Ending patterns should be two measures long.
   2) Now play back the pattern from your external sequencer. The complete pattern should now be ready to be assigned to a user memory location.
6. Storing your pattern. The final step is to store your new pattern on one of the five user memory locations using the **Store** button and the **Selector** buttons.

   If necessary see Page A – 13 of this manual to review this procedure.

◆Creating ONE FINGER AD-LIB Phrases

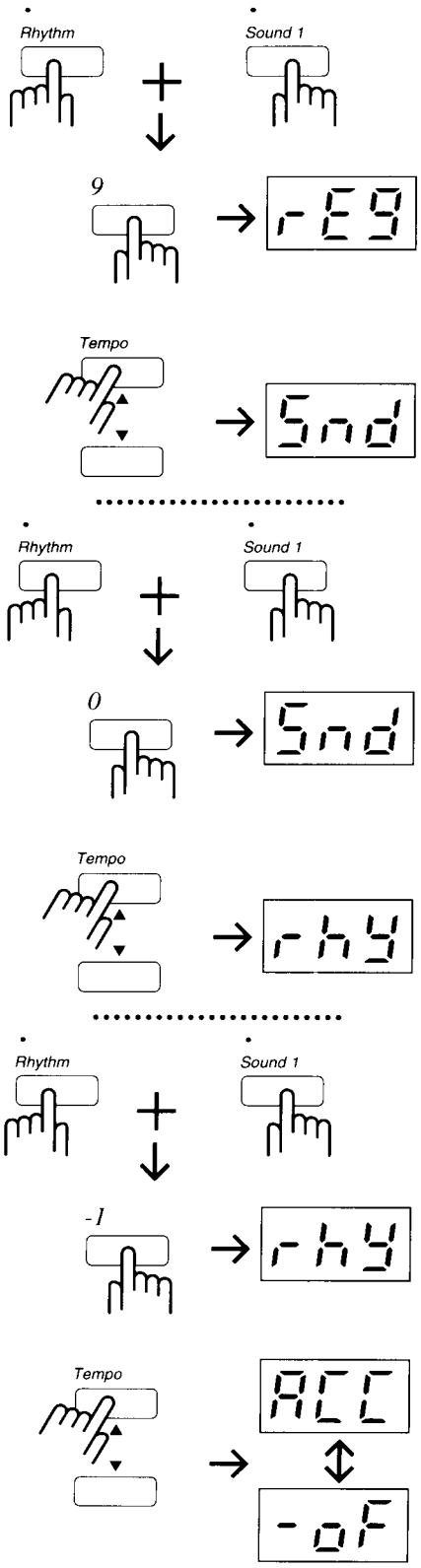
You can also use the same procedure described in the preceding pages to create ONE FINGER AD-LIB phrases on an external sequencer and store them in the FS780's user memory.

■ Recording ONE FINGER AD-LIB phrases created with a sequencer for use with the FS780

1. First, program your ONE FINGER AD-LIB phrase into the external sequencer. Remember that ONE FINGER AD-LIB phrases can only be one measure in length.
2. Prepare the FS780 to record.
   1) Use the **Rhythm** and **Selector** buttons to select the Accompaniment pattern you want as background for your ONE FINGER AD-LIB phrases.
   2) Make sure that the Playback (Transmit) channel of your external sequencer matches the FS780's Receive channel for Sound1 (the default is channel 1).
   3) Now begin by pressing the **Synth & Pattern Maker** button just as you did when you were creating ONE FINGER AD-LIB phrases.
3. Record the phrase

   Use the **Tempo Down** button to change the display so that it reads SYC (which, you will recall, is short for "SYNC."). Now, when you playback the phrase from the sequencer, it will be recorded as the ONE FINGER AD-LIB phrase for the ONE FINGER AD-LIB key that is currently selected.
4. By selecting different ONE FINGER AD-LIB keys, you can record different phrases from the external sequencer. When you are through recording new phrases, use the "storing" procedure (see page A – 15) to store the new Ad-Lib phrases in user memory along with the corresponding Accompaniment pattern.

◆Using Other Functions



As you know, it is possible to store the sounds and patterns you create in the FS780's user memory. However, the number of sounds and patterns you can store in this way is limited to five each. To increase your stock of sounds and patterns, the FS780 allows you to store them in an external sequencer (such the Q-80, a data filer, or some other external MIDI device). You can store the following data using this function:

a) Five sounds created using the synthesizer function
b) Five Auto-Accompaniment patterns plus corresponding ONE FINGER AD-LIB phrases
c) Twenty sets of REGISTRATION data

■ Storing REGISTRATION data you create for the FS690 in an external sequencer:

1. Press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **#9** button in the **Selector** section. The display will change so that it reads r E9 (short for "REGISTRATION"). By this, the FS780 is asking whether you want to transmit your REGISTRATIONs to another MIDI device.
2. Since this is exactly what you want to do, press the **Tempo Up** button. The display will change to read Snd. Your data transmission is now complete.

■ Sending the Sound data you create for FS780

Press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **#0** button in the **Selector** section. The display will change to read "Snd (short for Sound)". Press the **Tempo Up** button to send the data. The display will change to read "r hY". Your data transmission is now complete.

■ Sending the Auto-Accompaniment data plus corresponding ONE FINGER AD-LIB data you create for FS780

Press the **Rhythm** button and **Sound 1** button simultaneously. Then, press the **-1** button in the **Selector** section. The display will change to read "r hY (short for Rhythm)". Press the **Tempo Up** button to send the data. The display will read "t r n (short for "transmit") for a few moment, then change to alternate between "ACC" and "-oF". Your data transmission is now complete.

■ Sending stored data back to the FS780 from an external sequencer:

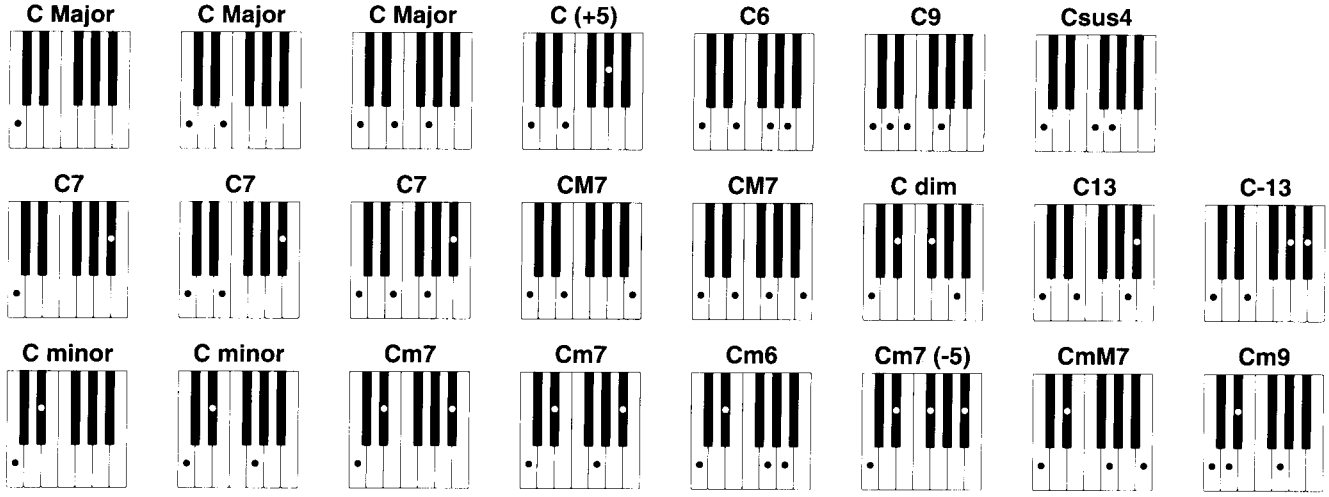
No special command is necessary to perform a data dump into the FS780. Simply command your external sequencer to transmit data to the FS780 while the rhythm or recorder of the FS780 is off. The FS780 will receive this data automatically.

These are a few examples of the ways in which the FS780's MIDI functions can be used. There are sure to be many more interesting and enjoyable things you can find to do with MIDI.

Its possibilities are limitless!

3.Appendices

How to play chords that FS780 can recognize (C root)



■Specifications

FS780

Keyboard:	61 keys, standard (Velosity sensitive)
Sounds:	100
Rhythms:	100
	Pitch bend wheel
Effects:	Chorus button, Sustain button, Duet button
Rhythm controls:	Start/Stop button, Sync./Fill In button, Tempo buttons
Recorder:	Rec/End button, Play/Stop button, Song/Select button
Auto-Accompaniment:	Auto button
Program:	Synth & Pattern Maker button, Regis. button
Volume controls:	Master Volume buttons, Chord Volume buttons, Bass Volume buttons, Rhythm Volume buttons
Miscellaneous controls:	ONE FINGER AD-LIB button, Arr. Exp. button, Demo button
Speakers:	12 cm x 2
Rated voltage:	9-12 V DC: six size C dry cell batteries or power adaptor (PS-102 or PS-101)
Accessory jacks:	MIDI IN/OUT, DAMPER PEDAL, ACC. HOLD PEDAL, DC (9-12 V) IN, HEADPHONE, OUTPUT (L/R)
Accessories:	Music rack

KAWAI

Date : June 1. 1992

Model: FS780

MIDI Implementation Chart

Version : 1.0

Function. . .		Transmitted				
		Sound 1/2	Chord/Bass	Rhythm	System	Remarks
Basic Channel	Default	1/2	3/4	10	1	Memorized
	Changed	1 – 16 (N/N+1)*	1 – 16 (N+2/N+3)*	1 – 16 (D ch)*	1 – 16 (R ch)	
Mode	Default	3	3	3	3	
	Messages	X	X	X	X	
	Altered	* * * * * * *	* * * * * * *	* * * * * * *	* * * * * * *	
Note Number		24 – 108	0 – 127	36 – 54	24 – 108	
	True Voice	* * * * * * *	12 – 108	12 – 108	* * * * * * *	
Velocity	Note ON	○	○	○	○	
	Note OFF	X 9n v = 0	X 9n v = 0	X 9n v = 0	X 9n v = 0	
After Touch	Key's	X	X	X	X	
	Ch's	X	X	X	X	
Pitch Bend		○	○	X	○	
Control Changes	1	○ (N/N+1)	X	X	X	
	7	○ (N/N+1)	○	○	○	Volume
	64	○ (N/N+1)	○ *	○ *	○	Hold
	93	○ (N/N+1)	X	X	○	(Chorus)
Prog Change	True #	○	○	○	○	
		0 – 99	0 – 99	0 – 99	0 – 99	
System Exclusive		* * * * * * *	* * * * * * *	* * * * * * *	○ **	
Common	: Song Pos	* * * * * * *	* * * * * * *	* * * * * * *	X	
	: Song Sel	* * * * * * *	* * * * * * *	* * * * * * *	X	
	: Tune	* * * * * * *	* * * * * * *	* * * * * * *	X	
System Real Time	: Clock	* * * * * * *	* * * * * * *	* * * * * * *	○ ***	
	: Commands	* * * * * * *	* * * * * * *	* * * * * * *	○	
Aux Messages	: Local ON/OFF	* * * * * * *	* * * * * * *	* * * * * * *	X	
	: All Notes OFF	* * * * * * *	* * * * * * *	* * * * * * *	X	
	: Active Sense	* * * * * * *	* * * * * * *	* * * * * * *	○	
	: Reset	* * * * * * *	* * * * * * *	* * * * * * *	X	
Notes		* Enabled when "Auto Send" is ON. ** Turns panel buttons ON and OFF. *** Enabled when a rhythm is playing.				

Mode 1 : OMNI ON, POLY

Mode 2 : OMNI ON, MONO

Mode 3 : OMNI OFF, POLY

Mode 4 : OMNI OFF, MONO

○ : Yes

X : No

KAWAI

Date : June 1. 1992

Model: FS780

MIDI Implementation Chart

Version : 1.0

Function...		Recognized				
		Sound 1/2	Chord/Bass	Rhythm	System	Remarks
Basic Channel	Default	1/2	3/4	10	1	Memorized
	Changed	1 – 16 (N/N+1)	1 – 16 (N+2/N+3)	1 – 16 (D ch)	1 – 16 (R ch)	
Mode	Default	3	3	3	3	
	Messages	X	X	X	X	
	Altered	* * * * * * *	* * * * * * *	* * * * * * *	* * * * * * *	
Note Number		0 – 127	0 – 127	36 – 54	* * * * * * *	
	True Voice	12 – 108	12 – 108	12 – 108	* * * * * * *	
Velocity	Note ON	○	○	○	* * * * * * *	
	Note OFF	X	X	X	* * * * * * *	
After Touch	Key's	X	X	X	* * * * * * *	
	Ch's	X	X	X	* * * * * * *	
Pitch Bend		○	○	X	* * * * * * *	5bit rese ±2semi
Control Changes	1	○ (N/N+1)	○	X	* * * * * * *	
	7	○ (N/N+1)	○	○	* * * * * * *	Volume
	64	○ (N/N+1)	○	X	* * * * * * *	Hold
	93	○ (N/N+1)	X	X	* * * * * * *	(Chorus)
Prog Change		○	○	○	○	
	True #	0 – 99	0 – 99	0 – 99	0 – 99	
System Exclusive		○	○	○	○	
Common	: Song Pos	* * * * * * *	* * * * * * *	* * * * * * *	X	
	: Song Sel	* * * * * * *	* * * * * * *	* * * * * * *	X	
	: Tune	* * * * * * *	* * * * * * *	* * * * * * *	X	
System Real Time	: Clock	* * * * * * *	* * * * * * *	* * * * * * *	○	*
	: Commands	* * * * * * *	* * * * * * *	* * * * * * *	○	
Aux Messages	: Local ON/OFF	* * * * * * *	* * * * * * *	* * * * * * *	X	
	: All Notes OFF	○	○	○	X	
	: Active Sense	* * * * * * *	* * * * * * *	* * * * * * *	○	
	: Reset	* * * * * * *	* * * * * * *	* * * * * * *	X	
Notes		* Enabled when "Tempo" is SYNC.				

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO

○ : Yes

X : No

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